AT-90SL AT-80SL MIDI IMPLEMENTATION

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1. Receive Channel

■Performance Parts and Transmission Channels

This instrument contains two sound generators: one for SMF data playback (GM2/GS) and one for keyboard performance. Normally, data received at the MIDI In connector will control only the sound generator for SMF data playback. However by changing the MIDI IN Mode setting, you can also control the keyboard sound generator from MIDI In. MIDI IN For instructions on changing the MIDI IN mode, refer to the Owner's Manual. For instructions on controlling each sound generator, refer to the "Received data" section (p. 1).

❍MIDI IN MODE

Mode	explanation
MODE 1	Control the instrument as a GM2/GS sound generator.
MODE 2	Channels 5 through 10 and Channels 12,14,15 are transmitted to the GM2/GS sound generator, and all other channels are transmitted to the keyboard sound generator. When the Pedal part tone has been selected, Channel 2 is transmitted to the sound generator used for the keyboard performance; if no tone has been selected, it is transmitted to the GM2/GS sound generator.

The correspondence between channels and parts in each mode is described below.

channel	MODE1	MODE2
1	GM2/GS	Solo
2	GM2/GS	Pedal
3	GM2/GS	Lower
4	GM2/GS	Upper
5-10	GM2/GS	GM2/GS
11	GM2/GS	Drums/SFX
12	GM2/GS	GM2/GS
13	GM2/GS	Nothing
14-15	GM2/GS	GM2/GS
16	GM2/GS	Control

■MIDI Channels on SMF Music Data

This instrument contains two sound generators. Commercial SMF music data is played back using the GM2/GS sound generator. The correspondence between channels and tracks when the AT's Track Mute function is used is described below.

Track	Channel
RHYTHM	10
ACCOMP	5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16
BASS	2
LOWER	3
UPPER	4
SOLO	1

When SMF music data created using the AT-90SL/80SL is used, the parts of the performance played by hand are transmitted to the sound generator used for the keyboard performance, and the automatic accompaniment portions (rhythm performances, Arranger) are transmitted to the GM2/GS sound generator.

The correspondence between channels and parts for SMF music data created using the AT-90SL/80SL is described below.

ch	part
1	Solo
2	Pedal/Accomp (Bass)
3	Lower
4	Upper
5-6	(blank)
7-9	Accomp
10	Accomp (Rhythm)
11	Drums/SFX
12	Accomp
13	Manual Percussion
14-15	Accomp
16	Control

2. Transmit Channel

■Keyboard and Transmit Channel

You can control external MIDI devices using the AT-90SL/80SL's MIDI Out connector. Data describing what is played on the Upper keyboard, the Lower keyboard, and the pedalboard is transmitted over MIDI channels for the respective parts. Messages from the AT-90SL/80SL's expression pedal and PC Numbers set in the Registrations are transmitted on the Control channel. The channels used for transmission can be changed individually for each Registration. For instructions on how to change the transmission channels, refer to the Owner's Manual.

Channel	(default)	Content Transmitted
Upper	(4)	Key information from the Upper keyboard is transmitted.
Lower	(3)	Key information from the Lower keyboard is transmitted.
Pedal	(2)	Performance information from the pedalboard is transmitted.
Solo	(1)	When "Solo to Lower" is set to ON, Solo part key information from the Upper keyboard is transmitted.
Control	(16)	Expression pedal information and PC Numbers set in the Registrations are transmitted.

* The PC Number is transmitted when Send PC Switch is set to ON.
* For more details regarding the data that is transmitted, refer to "Transmit data" (p. 7).

3. Receive Data

[GM2] ... This indicates reception when GM2 Mode is enabled. To switch to GM2 Mode, use GM2 System On (p. 5).
[GM1] ... This indicates reception when GM1 Mode is enabled. To switch to GM1 Mode, use GM1 System On (p. 5).
[GS] ... This indicates reception when GS Mode is enabled. To switch to GS Mode, use GS Reset (p. 5).
[AT] ... This indicates reception for the keyboard part when MIDI IN Mode is set to MODE 2. For more information about the keyboard parts, refer to the section on "Receive Channel" (p. 1).

■Channel Voice Messages

●Note off [GM2] [GM1] [GS] [AT]

Status	2nd byte	3rd byte
8nH	kkH	vvH
9nH	kkH	00H

n = MIDI channel number:	0H-FH (ch.1-ch.16)
kk = note number:	00H-7FH (0-127)
vv = note off velocity:	00H-7FH (0-127)

* For Drum Parts, these messages are received when Rx.NOTE OFF = ON for each Instrument [GS].
* The velocity values of Note Off messages are ignored.

●Note on [GM2] [GM1] [GS] [AT]

Status	2nd bytes	3rd byte
9nH	kkH	vvH

n = MIDI channel number:	0H-FH (ch.1-ch.16)
kk = note number:	00H-7FH (0-127)
vv = note on velocity:	01H-7FH (1-127)

* Not received when Rx.NOTE MESSAGE = OFF [GS]. (Initial value is ON)
* For Drum Parts, not received when Rx.NOTE ON = OFF for each Instrument [GS].

●Polyphonic Key Pressure [GS]

Status	2nd bytes	3rd byte
AnH	kkH	vvH

n = MIDI channel number:	0H-FH (ch.1-ch.16)
kk = note number:	00H-7FH (0-127)
vv = key pressure:	00H-7FH (0-127)

* Not received when Rx.POLY PRESSURE (PAf) = OFF [GS]. (Initial value is ON)
* The resulting effect is determined by System Exclusive messages. With the initial settings, there will be no effect [GS].
* Not Received in Keyboard Part.

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●Control Change

* When Rx.CONTROL CHANGE = OFF, all control change messages except for Channel Mode messages will be ignored [GS].
* The value specified by a Control Change message will not be reset even by a Program Change, etc.

❍Bank Select (Controller number 0, 32) [GM2] [GS]

Status	2nd bytes	3rd byte
BnH	00H	mmH
BnH	20H	llH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
mm, ll = Bank number: 00H, 00H-7FH, 7FH (bank.1-bank.16384), Initial Value = 00 00H (bank.1)

* After receiving "GM1 System On," Bank Select messages will be ignored. After receiving "GM2 System On" or "GS Reset," Bank Select messages will be recognized.
* Bank Select processing will be suspended until a Program Change message is received.
* Specification of the tones used by keyboard parts is accomplished using System Exclusive messages (p. 5).

❍Modulation (Controller number 1) [GM2] [GM1] [GS] [AT]

Status	2nd bytes	3rd byte
BnH	01H	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Modulation depth: 00H-7FH (0-127)

* Not received when Rx.MODULATION = OFF [GS]. (Initial value is ON)
* The resulting effect is determined by System Exclusive messages. With the initial settings, this is Pitch Modulation Depth [GS].

❍Portamento Time (Controller number 5) [GM2] [GS] [AT]

Status	2nd bytes	3rd byte
BnH	05H	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Portamento Time: 00H-7FH (0-127), Initial value = 00H (0)

* This adjusts the rate of pitch change when Portamento is ON or when using the Portamento Control. A value of 0 results in the fastest change.

❍Data Entry (Controller number 6, 38) [GM2] [GM1] [GS] [AT]

Status	2nd bytes	3rd byte
BnH	06H	mmH
BnH	26H	llH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
mm, ll = the value of the parameter specified by RPN/NRPN
mm = MSB, ll = LSB

❍Volume (Controller number 7) [GM2] [GM1] [GS] [AT]

Status	2nd bytes	3rd byte
BnH	07H	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Volume: 00H-7FH (0-127), Initial Value = 64H (100)

* Volume messages are used to adjust the volume balance of each Part.
* Not received when Rx.VOLUME = OFF [GS]. (Initial value is ON)
* Not Received in Keyboard Part.

❍Pan (Controller number 10) [GM2] [GM1] [GS] [AT]

Status	2nd bytes	3rd byte
BnH	0AH	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = pan: 00H-40H-7FH (Left-Center-Right), Initial Value = 40H (Center)

* For Rhythm Parts, this is a relative adjustment of each Instrument's pan setting [GS]. Not received when Rx.PANPOT = OFF [GS]. (Initial value is ON)
* Not Received in Keyboard Part.

❍Expression (Controller number 11) [GM2] [GM1] [GS] [AT]

Status	2nd bytes	3rd byte
BnH	0BH	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Expression: 00H-7FH (0-127), Initial Value = 7FH (127)

* It can be used independently from Volume messages. Expression messages are used for musical expression within a performance; e.g., expression pedal movements, crescendo and decrescendo.
* Not received when Rx.EXPRESSION = OFF [GS]. (Initial value is ON)
* If received on the Control Channel while MIDI IN Mode 2 is in effect, this changes the AT-90SL/80SL's overall volume in the same manner as the instrument's expression pedal. The volume of individual keyboard parts cannot be controlled independently [AT].

❍Hold 1 (Controller number 64) [GM2] [GM1] [GS] [AT]

Status	2nd bytes	3rd byte
BnH	40H	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-7FH (0-127)

* Not received when Rx.HOLD1 = OFF. [GS] (Initial value is ON)

❍Portamento (Controller number 65) [GM2] [GS] [AT]

Status	2nd bytes	3rd byte
BnH	41H	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-7FH (0-127) 0-63 = OFF, 64-127 = ON

* Not received when Rx.PORTAMENTO = OFF [GS]. (Initial value is ON)

❍Sostenuto (Controller number 66) [GM2] [GS] [AT]

Status	2nd bytes	3rd byte
BnH	42H	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-7FH (0-127) 0-63 = OFF, 64-127 = ON

* Not received when Rx.SOSTENUTO = OFF [GS]. (Initial value is ON)

❍Soft (Controller number 67) [GM2] [GS] [AT]

Status	2nd bytes	3rd byte
BnH	43H	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-7FH (0-127) 0-63 = OFF, 64-127 = ON

* Not received when Rx.SOFT = OFF [GS]. (Initial value is ON)
* Effects may vary depending on the tone used.

❍Resonance (Controller number 71) [GM2] [AT]

Status	2nd bytes	3rd byte
BnH	47H	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-40H-7FH (-64-0-+63)

* With certain tones, there may be no effect at all.

❍Release Time (Controller number 72) [GM2] [AT]

Status	2nd bytes	3rd byte
BnH	48H	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-40H-7FH (-64-0-+63)

* With certain tones, there may be no effect at all.

❍Attack Time (Controller number 73) [GM2] [AT]

Status	2nd bytes	3rd byte
BnH	49H	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-40H-7FH (-64-0-+63)

* With certain tones, there may be no effect at all.

❍Cutoff (Controller number 74) [GM2] [AT]

Status	2nd bytes	3rd byte
BnH	4AH	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-40H-7FH (-64-0-+63)

* With certain tones, there may be no effect at all.

❍Decay Time (Controller number 75) [GM2] [AT]

Status	2nd bytes	3rd byte
BnH	4BH	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-40H-7FH (-64-0-+63)

* With certain tones, there may be no effect at all.

❍Vibrato Rate (Controller number 76) [GM2] [AT]

Status	2nd bytes	3rd byte
BnH	4CH	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-40H-7FH (-64-0-+63)

❍Vibrato Depth (Controller number 77) [GM2] [AT]

Status	2nd bytes	3rd byte
BnH	4DH	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-40H-7FH (-64-0-+63)

❍Vibrato Delay (Controller number 78) [GM2] [AT]

Status	2nd bytes	3rd byte
BnH	4EH	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-40H-7FH (-64-0-+63)

❍Portamento control (Controller number 84) [GS] [AT]

Status	2nd bytes	3rd byte
BnH	54H	kkH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
kk = source note number: 00H-7FH (0-127)

* A Note-on received immediately after a Portamento Control message will change continuously in pitch, starting from the pitch of the Source Note Number.
* If a voice is already sounding for a note number identical to the Source Note Number, this voice will continue sounding (i.e., legato) and will, when the next Note-on is received, smoothly change to the pitch of that Note-on.
* The rate of the pitch change caused by Portamento Control is determined by the Portamento Time value.

Example 1.

On MIDI (Description)	Result
90 3C 40 (Note on C4)	C4 on
B0 54 3C (Portamento Control from C4)	no change
90 40 40 (Note on E4)	glide from C4 to E4
80 3C 40 (Note off C4)	no change
80 40 40 (Note off E4)	E4 off

Example 2.

On MIDI (Description)	Result
B0 54 3C (Portamento Control from C4)	no change
90 40 40 (Note on E4)	E4 is played with glide from C4 to E4
80 40 40 (Note off E4)	E4 off

❍Effect 1 (Reverb Send Level) (Controller number 91) [GM2] [GS]

Status	2nd bytes	3rd byte
BnH	5BH	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-7FH (0-127), Initial Value = 28H (40)

* This message adjusts the Reverb Send Level of each Part.

❍Effect 3 (Chorus Send Level) (Controller number 93) [GM2] [GS]

Status	2nd bytes	3rd byte
BnH	5DH	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-7FH (0-127), Initial Value = 00H (0)

* This message adjusts the Chorus Send Level of each Part.

❍NRPN MSB/LSB (Controller number 98, 99) [GS]

Status	2nd bytes	3rd byte
BnH	63H	mmH
BnH	62H	llH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
mm = upper byte of the parameter number specified by NRPN
ll = lower byte of the parameter number specified by NRPN

* NRPN can be received when Rx.NRPN = ON. "Rx.NRPN" is set to OFF by power-on reset or by receiving "Turn General MIDI System On," and it is set to ON by "GS Reset."
* The value set by NRPN will not be reset even if Program Change or Reset All Controllers is received.
* Not Received in Keyboard Part.

NRPN

The NRPN (Non Registered Parameter Number) message allows an extended range of control changes to be used.
To use these messages, you must first use NRPN MSB and NRPN LSB messages to specify the parameter to be controlled, and then use Data Entry messages to specify the value of the specified parameter. Once an NRPN parameter has been specified, all Data Entry messages received on that channel will modify the value of that parameter. To prevent accidents, it is recommended that you set RPN Null (RPN Number = 7FH/7FH) when you have finished setting the value of the desired parameter. Refer to Section 6. Supplementary material "Examples of actual MIDI messages" <Example 4> (p. 17) On the GS devices, Data entry LSB (llH) of NRPN is ignored, so it is no problem to send Data entry MSB (mmH) only (without Data entry LSB).

On the AT-90SL/80SL, NRPN can be used to modify the following parameters.

NRPN MSB LSB	Data entry MSB	Description
01H 08H	mmH	Vibrato rate (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
01H 09H	mmH	Vibrato depth (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
01H 0AH	mmH	Vibrato delay (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
01H 20H	mmH	TVF cutoff frequency (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
01H 21H	mmH	TVF resonance (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
01H 63H	mmH	TVF&TVA Env.Attack time (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
01H 64H	mmH	TVF&TVA Env.Decay time (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
01H 66H	mmH	TVF&TVA Env.Release time (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
18H rrH	mmH	Pitch coarse of drum instrument (relative change on specified drum instrument) rr: key number of drum instrument mm: 00H-40H-7FH (-63 - 0 - +63 semitone)
1AH rrH	mmH	TVA level of drum instrument (absolute change on specified drum instrument) rr: key number of drum instrument mm: 00H-7FH (zero-maximum)
1CH rrH	mmH	Panpot of drum instrument (absolute change on specified drum instrument) rr: key number of drum instrument mm: 00H, 01H-40H-7FH (Random, Left-Center-Right)
1DH rrH	mmH	Reverb send level of drum instrument (absolute change on specified drum instrument) rr: key number of drum instrument mm: 01H-7FH (zero-maximum)
1EH rrH	mmH	Chorus send level of drum instrument (absolute change on specified drum instrument) rr: key number of drum instrument mm: 01H-7FH (zero-maximum)

* Parameters marked “relative change” will change relative to the preset value.
* Parameters marked “absolute change” will be set to the absolute value of the parameter, regardless of the preset value.

❍RPN MSB/LSB (Controller number 100, 101)

Status	2nd bytes	3rd byte
BnH	65H	mmH
BnH	64H	llH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
mm = upper byte of parameter number specified by RPN
ll = lower byte of parameter number specified by RPN

* Not received when Rx.RPN = OFF. (Initial value is ON)
* The value specified by RPN will not be reset even by messages such as Program Change or Reset All Controller.

****RPN****

The RPN (Registered Parameter Number) messages are expanded control changes, and each function of an RPN is described by the MIDI Standard.
To use these messages, you must first use RPN MSB and RPN LSB messages to specify the parameter to be controlled, and then use Data Entry messages to specify the value of the specified parameter. Once an RPN parameter has been specified, all Data Entry messages received on that channel will modify the value of that parameter. To prevent accidents, it is recommended that you set RPN Null (RPN Number = 7FH/7FH) when you have finished setting the value of the desired parameter.Refer to Section 6. “Examples of actual MIDI messages” <Example 4> (p. 17).

On the AT-90SL/80SL, RPN can be used to modify the following parameters.

RPN MSB LSB	Data entry MSB LSB	Explanation
00H 00H	mmH ---	Pitch Bend Sensitivity [GM2] [GM1] [GS] [AT] mm: 00H-18H (0-24 semitones), Initial Value = 02H (2 semitones) ll: ignored (processed as 00h) specify up to 2 octaves in semitone steps
00H 01H	mmH llH	Master Fine Tuning [GM2] [GM1] [GS] [AT] mm, ll: 20 00H - 40 00H - 60 00H (-50 - 0 - +50 cents), Initial Value = 40 00H (0 cent) ll: ignored (processed as 00h) Refer to 6. Supplementary material, “About tuning” (p. 18)
00H 02H	mmH ---	Master Coarse Tuning [GM2] [GM1] [GS] [AT] mm: 10H - 40H - 70H (-48 - 0 - +48 semitones), Initial Value = 40H (0 cent) ll: ignored (processed as 00h)
00H 05H	mmH llH	Modulation Depth Range [GM2] mm, ll: 00 00H - 06 00H (0 - 16384 * 600 / 16384 cent)
7FH 7FH	--- ---	RPN null Set condition where RPN and NRPN are unspecified. The data entry messages after set RPN null will be ignored. (No Data entry messages are required after RPN null). Settings already made will not change. mm, ll: ignored

●Program Change [GM2] [GM1] [GS]

Status	2nd bytes
CnH	ppH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
pp = Program number: 00H-7FH (prog.1-prog.128)

* Not received when Rx.PROGRAM CHANGE = OFF [GS]. (Initial value is ON)
* After a Program Change message is received, the sound will change beginning with the next Note-on. Voices already sounding when the Program Change message was received will not be affected.
* When MIDI-IN Mode = Mode-2, it should be used System Exclusive messages to change the voice of keyboard part (p. 12).
* Not Received in Keyboard Part.

●Channel Pressure [GM2] [GM1] [GS]

Status	2nd bytes
DnH	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Channel Pressure: 00H-7FH (0-127)

* Not received when Rx.CH PRESSURE (CAf) = OFF. [GS] (Initial value is ON)
* The resulting effect is determined by System Exclusive messages. With the initial settings there will be no effect [GS].

●Pitch Bend Change [GM2] [GM1] [GS] [AT]

Status	2nd byte	3rd bytes
EnH	llH	mmH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
mm, ll = Pitch Bend value: 00 00H - 40 00H - 7F 7FH (-8192 - 0 - +8191)

* Not received when Rx.PITCH BEND = OFF [GS]. (Initial value is ON)
* The resulting effect is determined by System Exclusive messages. With the initial settings the effect is Pitch Bend [GS].

■Channel Mode Messages

●All Sounds Off (Controller number 120) [GM2] [GS] [AT]

Status	2nd byte	3rd bytes
BnH	78H	00H

n = MIDI channel number: 0H-FH (ch.1-ch.16)

* When this message is received, all notes currently sounding on the corresponding channel will be turned off.

●Reset All Controllers (Controller number 121) [GM2] [GS]

Status	2nd byte	3rd byte
BnH	79H	00H

n = MIDI channel number: 0H - FH (Ch.1 - 16)

* When this message is received, the following controllers will be set to their reset values.

Controller	Reset value
Pitch Bend Change	+/-0 (center)
Polyphonic Key Pressure	0 (off)
Channel Pressure	0 (off)
Modulation	0 (off)
Expression	127 (max)
Hold 1	0 (off)
Sostenuto	0 (off)
Soft	0 (off)
RPN	unset; previously set data will not change
NRPN	unset; previously set data will not change

●All Notes Off (Controller number 123) [GM2] [GM1] [GS] [AT]

Status	2nd byte	3rd bytes
BnH	7BH	00H

n = MIDI channel number: 0H-FH (ch.1-ch.16)

* When All Notes Off is received, all notes on the corresponding channel will be turned off. However if Hold 1 or Sostenuto is ON, the sound will be continued until these are turned off.

●OMNI OFF (Controller number 124) [GM2] [GS] [AT]

Status	2nd byte	3rd bytes
BnH	7CH	00H

n = MIDI channel number: 0H-FH (ch.1-ch.16)

* The same processing will be carried out as when All Notes Off is received.

●OMNI ON (Controller number 125) [GM2] [GS] [AT]

Status	2nd byte	3rd bytes
BnH	7DH	00H

n = MIDI channel number: 0H-FH (ch.1-ch.16)

* OMNI ON is only recognized as “All notes off”; the Mode doesn’t change (OMNI OFF remains).

●MONO (Controller number 126) [GM2] [GS] [AT]

Status	2nd byte	3rd bytes
BnH	7EH	mmH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
mm = mono number: 00H-10H (0-16)

* The same processing will be carried out as when All Sounds Off and All Notes Off is received, and the corresponding channel will be set to Mode 4 (M = 1) regardless of the value of "mono number."

●POLY (Controller number 127) [GM2] [GS] [AT]

Status	2nd byte	3rd bytes
BnH	7FH	00H

n = MIDI channel number: 0H-FH (ch.1-ch.16)

* The same processing will be carried out as when All Sounds Off and All Notes Off is received, and the corresponding channel will be set to Mode 3.

■System Exclusive Message

Status	Data byte	Status
F0H	iiH, ddH, ..., eeH	F7H

F0H: System Exclusive Message status
ii = ID number: ID number (manufacturer ID) to indicate the manufacturer whose Exclusive message this is. Roland's manufacturer ID is 41H.
ID numbers 7EH and 7FH are extensions of the MIDI standard; Universal Non-realtime Messages (7EH) and Universal Realtime Messages (7FH).
dd,...,ee = data: 00H-7FH (0-127)
F7H: EOX (End Of Exclusive)

The System Exclusive Messages received by the AT-90SL/80SL are; messages related to mode settings, Universal Realtime System Exclusive messages and Data Set (DT1).

●System exclusive messages related to mode settings

These messages are used to initialize a device to GS or General MIDI mode, or change the operating mode.
When creating performance data, a "GM2 System On" or "GM1 System On" message should be inserted at the beginning of a General MIDI score, and a "GS Reset" message at the beginning of a GS music data. Each song should contain only one mode message as appropriate for the type of data. (Do not insert two or more mode setting messages in a single song.)

❍GM1 System On

Status	Data byte	Status
F0H	7EH, 7FH, 09H, 01H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
7FH	Device ID (Broadcast)
09H	Sub ID#1 (General MIDI Message)
01H	Sub ID#2 (General MIDI 1 On)
F7H	EOX (End Of Exclusive)

* When this messages is received, this instrument will turn to the GM mode.
* Not received in Keyboard Part.

❍GM2 System On

Status	Data byte	Status
F0H	7EH 7FH 09H 03H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
7FH	Device ID (Broadcast)
09H	Sub ID#1 (General MIDI Message)
03H	Sub ID#2 (General MIDI 2 On)
F7H	EOX (End Of Exclusive)

* When this messages is received, this instrument will turn to the GM mode.
* Not received in Keyboard Part.

❍GM System Off

Status	Data byte	Status
F0H	7EH, 7F, 09H, 02H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
7FH	Device ID (Broadcast)
09H	Sub ID#1 (General MIDI Message)
02H	Sub ID#2 (General MIDI Off)
F7H	EOX (End Of Exclusive)

* Not Received in Keyboard Part.

❍GS reset

GS Reset is a command message that resets the internal settings of a device to the GS initial state. This message will appear at the beginning of GS music data, and a GS device that receives this message will automatically be set to the proper state to correctly playback GS music data.

Status	Data byte	Status
F0H	41H, 10H, 42H, 12H, 40H, 00H, 7FH, 00H, 41H	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number (Roland)
10H	Device ID (dev: 00H-1FH (1-32), Initial value is 10H (17))
42H	Model ID (GS)
12H	Command ID (DT1)
40H	Address MSB
00H	Address
7FH	Address LSB
00H	Data (GS reset)
41H	Checksum
F7H	EOX (End Of Exclusive)

* When this message is received, Rx.NRPN will be ON.
* There must be an interval of at least 50 ms between this message and the next.
* Not Received in Keyboard part.

❍Exit GS mode

Status	Data byte	Status
F0H	41H, 10H, 42H, 12H, 40H, 00H, 7FH, 7FH, 42H	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number (Roland)
10H	Device ID
42H	Model ID (GS)
12H	Command ID (DT1)
40H	Address MSB
00H	
7FH	Address LSB
7FH	Data (Exit GS mode)
42H	Checksum
F7H	EOX (End of exclusive)

* There must be an interval of at least 50 ms between this message and the next.
* Not Received in Keyboard Part.

●Universal Realtime System Exclusive Messages

❍Master volume [GM2] [GS]

Status	Data byte	Status
F0H	7FH, 7FH, 04H, 01H, llH, mmH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
04H	Sub ID#1 (Device Control messages)
01H	Sub ID#2 (Master Volume)
llH	Master volume lower byte
mmH	Master volume upper byte
F7H	EOX (End Of Exclusive)

* The lower byte (llH) of Master Volume will be handled as 00H.

❍Master Fine Tuning [GM2]

Status	Data byte	Status
F0H	7FH, 7FH, 04H, 03H, llH, mmH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
04H	Sub ID#1 (Device Control)
03H	Sub ID#2 (Master Fine Tuning)
llH	Master Fine Tuning LSB
mmH	Master Fine Tuning MSB
F7H	EOX (End Of Exclusive)

mm, ll: 00 00H - 40 00H - 7F 7FH (-100 - 0 - +99.9 [cents])

❍Master Coarse Tuning [GM2]

Status	Data byte	Status
F0H	7FH, 7FH, 04H, 04H, llH, mmH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
04H	Sub ID#1 (Device Control)
04H	Sub ID#2 (Master Coarse Tuning)
llH	Master Coarse Tuning LSB
mmH	Master Coarse Tuning MSB
F7H	EOX (End Of Exclusive)

llH:	ignored (processed as 00H)
mmH:	28H - 40H - 58H (-24 - 0 - +24 [semitones])

●Global Parameter Control

❍Reverb Parameters [GM2]

Status	Data byte	Status
F0H	7FH, 7FH, 04H, 05H, 01H, 01H, 01H, 01H, 01H, ppH, vvH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
04H	Sub ID#1 (Device Control)
05H	Sub ID#2 (Global Parameter Control)
01H	Slot path length
01H	Parameter ID width
01H	Value width
01H	Slot path MSB
01H	Slot path LSB (Effect 0101: Reverb)
ppH	Parameter to be controlled.
vvH	Value for the parameter. pp=0 Reverb Type vv = 00H Small Room vv = 01H Medium Room vv = 02H Large Room vv = 03H Medium Hall vv = 04H Large Hall vv = 08H Plate pp=1 Reverb Time vv = 00H - 7FH 0 - 127
F7H	EOX (End Of Exclusive)

❍Chorus Parameters [GM2]

Status	Data byte	Status
F0H	7FH, 7FH, 04H, 05H, 01H, 01H, 01H, 01H, 02H, ppH, vvH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
04H	Sub ID#1 (Device Control)
05H	Sub ID#2 (Global Parameter Control)
01H	Slot path length
01H	Parameter width
01H	Value width
01H	Slot path MSB
02H	Slot path LSB (Effect 0102: Chorus)
ppH	Parameter to be controlled.
vvH	Value for the parameter. pp=0 Chorus Type vv=0 Chorus1 vv=1 Chorus2 vv=2 Chorus3 vv=3 Chorus4 vv=4 FB Chorus vv=5 Flanger pp=1 Mod Rate vv= 00H - 7FH 0 - 127 pp=2 Mod Depth vv = 00H - 7FH 0 - 127 pp=3 Feedback vv = 00H - 7FH 0 - 127 pp=4 Send To Reverb vv = 00H - 7FH 0 - 127
F7H	EOX (End Of Exclusive)

❍Channel Pressure [GM2]

Status	Data byte	Status
F0H	7FH, 7FH, 09H, 01H, 0nH, ppH, rrH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
09H	Sub ID#1 (Controller Destination Setting)
01H	Sub ID#2 (Channel Pressure)
0nH	MIDI Channel (00 - 0F)
ppH	Controlled parameter
rrH	Controlled range pp=0 Pitch Control rr = 28H - 58H -24 - +24 [semitones] pp=1 Filter Cutoff Control rr = 00H - 7FH -9600 - +9450 [cents] pp=2 Amplitude Control rr = 00H - 7FH 0 - 200% pp=3 LFO Pitch Depth rr = 00H - 7FH 0 - 600 [cents] pp=4 LFO Filter Depth rr = 00H - 7FH 0 - 2400 [cents] pp=5 LFO Amplitude Depth rr = 00H - 7FH 0 - 100%
F7H	EOX (End Of Exclusive)

❍Controller [GM2]

Status	Data byte	Status
F0H	7FH, 7FH, 09H, 03H, 0nH, ccH, ppH, rrH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
09H	Sub ID#1 (Controller Destination Setting)
03H	Sub ID#2 (Control Change)
0nH	MIDI Channel (00 - 0F)
ccH	Controller number (01 - 1F, 40 - 5F)
ppH	Controlled parameter
rrH	Controlled range pp=0 Pitch Control rr = 28H - 58H -24 - +24 [semitones] pp=1 Filter Cutoff Control rr = 00H - 7FH -9600 - +9450 [cents] pp=2 Amplitude Control rr = 00H - 7FH 0 - 200% pp=3 LFO Pitch Depth rr = 00H - 7FH 0 - 600 [cents] pp=4 LFO Filter Depth rr = 00H - 7FH 0 - 2400 [cents] pp=5 LFO Amplitude Depth rr = 00H - 7FH 0 - 100%
F7H	EOX (End Of Exclusive)

❍Scale/Octave Tuning Adjust [GM2]

Status	Data byte	Status
F0H	7EH, 7FH, 08H, 08H, ffH, ggH, hhH, ssH...	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
7FH	Device ID (Broadcast)
08H	Sub ID#1 (MIDI Tuning Standard)
08H	Sub ID#2 (scale/octave tuning 1-byte form)
ffH	Channel/Option byte 1 bits 0 to 1 = channel 15 to 16 bit 2 to 6 = Undefined
ggH	Channel byte 2 bits 0 to 6 = channel 8 to 14
hhH	Channel byte 3 bits 0 to 6 = channel 1 to 7
ssH	12 byte tuning offset of 12 semitones from C to B 00H = -64 [cents] 40H = 0 [cents] (equal temperament) 7FH = +63 [cents]
F7H	EOX (End Of Exclusive)

❍Key-based Instrument Controllers [GM2]

Status	Data byte	Status
F0H	7FH, 7FH, 0AH, 01H, 0nH, kkH, nnH, vvH	F7H

Byte	Explanation	
F0H	Exclusive status	
7FH	ID number (universal realtime message)	
7FH	Device ID (Broadcast)	
0AH	Sub ID#1 (Key-Based Instrument Control)	
01H	Sub ID#2 (Controller)	
0nH	MIDI Channel (00 - 0F)	
kkH	Key Number	
nnH	Control Number	
vvH	Value	
	nn=07H Level	
	vv = 00H - 7FH	0 - 200% (Relative)
	nn=0AH	Pan
	vv = 00H - 7FH	Left - Right (Absolute)
	nn=5BH	Reverb Send
	vv = 00H - 7FH	0 - 127 (Absolute)
	nn=5D	Chorus Send
	vv = 00H - 7FH	0 - 127 (Absolute)
:	:	
F7	EOX (End Of Exclusive)	

* This parameter affects drum instruments only.

❍Data transmission

AT-90SL/80SL can receive the various parameters using System Exclusive messages.
The exclusive message of GS format data has a model ID of 42H and a device ID of 10H (17), and it is common to all the GS devices.
When keyboard part in MIDI-IN Mode: Mode-2, the exclusive message has a model ID of 62H and a device ID of 10H (17).

❍Data set 1 DT1

This is the message that actually performs data transmission, and is used when you wish to transmit the data.

Status	Data byte	Status
F0H	41H, 10H, 42H, 12H, aaH, bbH, ccH, ddH, ... eeH, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number (Roland)
10H	Device ID
42H	Model ID (GS part: 42H, Keyboard part: 62H)
12H	Command ID (DT1)
aaH	Address MSB: upper byte of the starting address of the transmitted data
bbH	Address: middle byte of the starting address of the transmitted data
ccH	Address LSB: lower byte of the starting address of the transmitted data
ddH	Data: the actual data to be transmitted. Multiple bytes of data are transmitted starting from the address.
:	:
:	:
eeH	Data
sum	Checksum
F7H	EOX (End Of Exclusive)

* The amount of data that can be transmitted at one time depends on the type of data, and data can be received only from the specified starting address and size. Refer to the Address and Size given in Section 3 (p. 1).
* Data larger than 128 bytes must be divided into packets of 128 bytes or less. If "Data Set 1" is transmitted successively, there must be an interval of at least 40 ms between packets.
* Regarding the checksum please refer to section 4 (p. 7).

4. Transmit data

Arranger and composer data can not be transmitted.

■Channel Voice Messages

●Note off

❍Upper Keyboard

Status	2nd byte	3rd byte
8nH	kkH	40H

n = MIDI channel number:	0H-FH (ch.1-ch.16)
:	Initial Value = 3H (ch.4)
kk = note number:	30H-67H (48-103) **

* Note off message is sent out with the velocity of 40H.
** When the transpose is set to 0.

❍Lower Keyboard

Status	2nd byte	3rd byte
8nH	kkH	40H

n = MIDI channel number:	0H-FH (ch.1-ch.16)
:	Initial Value = 2H (ch.3)
kk = note number:	1CH-67H (28-103) **

* Note off message is sent out with the velocity of 40H.
** When the transpose is set to 0.

❍Bass Pedalboard

Status	2nd byte	3rd byte
8nH	kkH	40H

n = MIDI channel number:	0H-FH (ch.1-ch.16)
:	Initial Value = 1H (ch.2)
kk = note number:	24H-37H (36-55) (AT-80SL) **
	24H-3CH (36-60) (AT-90SL) **

* Note off message is sent out with the velocity of 40H.
** When the transpose is set to 0.

●Note on

❍Upper Keyboard

Status	2nd bytes	3rd byte
9nH	kkH	vvH

n = MIDI channel number:	0H-FH (ch.1-ch.16)
:	Initial Value = 3H (ch.4)
kk = note number:	30H-67H (48-103) **
vv = note on velocity:	05H-7FH (5-127)

** When the transpose is set to 0.

❍Lower Keyboard

Status	2nd bytes	3rd byte
9nH	kkH	vvH

n = MIDI channel number:	0H-FH (ch.1-ch.16)
:	Initial Value = 2H (ch.3)
kk = note number:	1CH-67H (28-103) **
vv = note on velocity:	05H-7FH (5-127)

** When the transpose is set to 0.

❍Bass Pedalboard

Status	2nd bytes	3rd byte
9nH	kkH	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
: Initial Value = 1H (ch.2)
kk = note number: 24H-37H (36-55) (AT-80SL) **
24H-3CH (36-60) (AT-90SL) **
vv = note on velocity: 64H (100)

** When the transpose is set to 0.

●Control Change

❍Bank Select (Controller number 0, 32)

Status	2nd bytes	3rd byte
BnH	00H	mmH
BnH	20H	llH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
mm, ll = Bank number: 00H, 00H-7FH, 7FH (bank.1-bank.16384)

❍Expression (Controller number 11)

Status	2nd bytes	3rd byte
BnH	0BH	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Expression: 00H-7FH (0-127)

* These are transmitted via the Control Channel.

❍Hold 1 (Controller number 64)

Status	2nd bytes	3rd byte
BnH	40H	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-7FH (0-127)

●Program Change

Status	2nd bytes
CnH	ppH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
pp = Program number: 00H-7FH (prog.1-prog.128)

* Program Change numbers stored in the Registrations are transmitted via the Control Channel.

■System Realtime Message

●Realtime Clock

Status
F8H

●Start

Status
FAH

* Transmitted when a song is started in Composer.

●Continue

Status
FBH

* Transmitted when a song is started in Composer from a point other than the beginning of the song.

●Stop

Status
FCH

* Transmitted when Composer is stopped.

●Active Sensing

Status
FEH

* This will be transmitted constantly at intervals of approximately 250 ms.

■System Exclusive Messages

●Universal Non-realtime System Exclusive Message

❍Identity Reply Message

Receiving Identity Request Message, the AT-90SL/80SL send this message.
Reply messages vary according to the MIDI IN mode.

(AT-90SL: When MIDI-In Mode is set to Mode-1)

Status	Data byte	Status
F0H	7EH, 10H, 06H, 02H, 41H, 42H, 00H 00H, 0BH, 06H, 01H, 00H, 00H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (universal non-realtime message)
10H	Device ID
06H	Sub ID#1 (General Information)
02H	Sub ID#2 (Identity Reply)
41H	ID number (Roland)
42H 00H	Device family code (GS)
00H 0BH	Device family number code
06H 01H 00H 00H	Software revision level
F7H	EOX (End of Exclusive)

(AT-80SL: When MIDI-In Mode is set to Mode-1)

Status	Data byte	Status
F0H	7EH, 10H, 06H, 02H, 41H, 42H, 00H 00H, 0BH, 05H, 01H, 00H, 00H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (universal non-realtime message)
10H	Device ID
06H	Sub ID#1 (General Information)
02H	Sub ID#2 (Identity Reply)
41H	ID number (Roland)
42H 00H	Device family code (GS)
00H 0BH	Device family number code
05H 01H 00H 00H	Software revision level
F7H	EOX (End of Exclusive)

(AT-90SL: When MIDI-In Mode is set to Mode-2)

Status	Data byte	Status
F0H	7EH, 10H, 06H, 02H, 41H, 62H, 00H, 04H, 03H 01H, 01H, 00H, 00H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (universal non-realtime message)
10H	Device ID
06H	Sub ID#1 (General Information)
02H	Sub ID#2 (Identity Reply)
41H	ID number (Roland)
62H 00H	Device family code (Atelier)
04H 03H	Device family number code
01H 01H 00H 00H	Software revision level
F7H	EOX (End of Exclusive)

(AT-80SL: When MIDI-In Mode is set to Mode-2)

Status	Data byte	Status
F0H	7EH, 10H, 06H, 02H, 41H, 62H, 00H, 04H, 03H 00H, 01H, 00H, 00H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (universal non-realtime message)
10H	Device ID
06H	Sub ID#1 (General Information)
02H	Sub ID#2 (Identity Reply)
41H	ID number (Roland)
62H 00H	Device family code (Atelier)
04H 03H	Device family number code
00H 01H 00H 00H	Software revision level
F7H	EOX (End of Exclusive)

●System exclusive messages related to V-LINK settings

❍V-LINK ON

Status	Data byte	Status
F0H	41H, dev, 00H, 51H, 12H, 10H, 00H, 00H, 01H, 0FH, 0FH, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number
7FH	Device ID (universal)
00H	Model ID#1 (DV-7PR)
51H	Model ID#2 (DV-7PR)
12H	Command ID (DT1)
10H	Address MSB
00H	Address
00H	Address LSB
01H	Data (V-LINK ON)
0FH	Data (Clip Ctrl Rx MIDI ch:16)
0FH	Data (ColorCtrl Rx MIDI ch:16)
sum	Checksum
F7H	EOX (End Of Exclusive)

❍V-LINK OFF

Status	Data byte	Status
F0H	41H, dev, 00H, 51H, 12H, 10H, 00H, 00H, 00H, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number
7FH	Device ID (universal)
00H	Model ID#1 (DV-7PR)
51H	Model ID#2 (DV-7PR)
12H	Command ID (DT1)
10H	Address MSB
00H	Address
00H	Address LSB
00H	Data (V-LINK OFF)
sum	Checksum
F7H	EOX (End Of Exclusive)

❍SENDER MODEL NAME (AT-90SL)

Status	Data byte	Status
F0H	41H, dev, 00H, 51H, 12H, 10H, 71H, 00H, 41H, 54H, 2DH, 39H, 30, 53H, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number
7FH	Device ID (universal)
00H	Model ID#1 (DV-7PR)
51H	Model ID#2 (DV-7PR)
12H	Command ID (DT1)
10H	Address MSB
71H	Address
00H	Address LSB
41H	Data (A)
54H	Data (T)
2DH	Data (-)
39H	Data (9)
30H	Data (0)
53H	Data (S)
00H	Data (End of Name)
sum	Checksum
F7H	EOX (End Of Exclusive)

❍SENDER MODEL NAME (AT-80SL)

Status	Data byte	Status
F0H	41H, dev, 00H, 51H, 12H, 10H, 71H, 00H, 41H, 54H, 2DH, 38H, 30, 53H, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number
7FH	Device ID (universal)
00H	Model ID#1 (DV-7PR)
51H	Model ID#2 (DV-7PR)
12H	Command ID (DT1)
10H	Address MSB
71H	Address
00H	Address LSB
41H	Data (A)
54H	Data (T)
2DH	Data (-)
38H	Data (8)
30H	Data (0)
53H	Data (S)
00H	Data (End of Name)
sum	Checksum
F7H	EOX (End Of Exclusive)

❍KEYBOARD RANGE

Status	Data byte	Status
F0H	41H, dev, 00H, 51H, 12H, 10H, 30H, 02H, 5CH, 67H, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number
7FH	Device ID (universal)
00H	Model ID#1 (DV-7PR)
51H	Model ID#2 (DV-7PR)
12H	Command ID (DT1)
10H	Address MSB
30H	Address
02H	Address LSB
5CH	Data (Keyboard Range Lower:G#6)
67H	Data (Keyboard Range Upper:A7)
sum	Checksum
F7H	EOX (End Of Exclusive)

❍NOTE MESSAGE ENABLED ASSIGNABLE

Status	Data byte	Status
F0H	41H, dev, 00H, 51H, 12H, 10H, 00H, 03H, 02H, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number
7FH	Device ID (universal)
00H	Model ID#1 (DV-7PR)
51H	Model ID#2 (DV-7PR)
12H	Command ID (DT1)
10H	Address MSB
00H	Address
03H	Address LSB
02H	Data (assignable)
sum	Checksum
F7H	EOX (End Of Exclusive)

❍NOTE MESSAGE ENABLED OFF

Status	Data byte	Status
F0H	41H, dev, 00H, 51H, 12H, 10H, 00H, 03H, 00H, sum	F7H

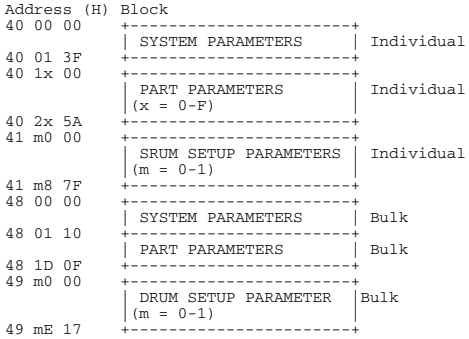
Byte	Explanation
F0H	Exclusive status
41H	ID number
7FH	Device ID (universal)
00H	Model ID#1 (DV-7PR)
51H	Model ID#2 (DV-7PR)
12H	Command ID (DT1)
10H	Address MSB
00H	Address
03H	Address LSB
00H	Data (OFF)
sum	Checksum
F7H	EOX (End Of Exclusive)

5. Parameter Address Map

This map indicates address, size, Data (range), Parameter, Description, and Default Value of parameters which can be transferred using and "Data set 1 (DT1)."
All the numbers of address, size, Data, and Default Value are indicated in 7-bit Hexadecimal-form.

■Address Block map (GS Part: Model ID = 42H)

An outlined address map of the Exclusive Communication is as follows;



There are two ways in which GS data is transmitted: Individual Parameter Transmission in which individual parameters are transmitted one by one, and Bulk Dump Transmission in which a large amount of data is transmitted at once.

■Individual Parameters

Individual Parameter Transmission transmits data (or requests data) for one parameter as one exclusive message (one packet of "F0 ..... F7").
In Individual Parameter Transmission, you must use the Address and Size listed in the following "Parameter Address Map." Addresses marked at "#" cannot be used as starting addresses.

●System Parameters [Keyboard Part: Model ID = 62H]

Parameters related to the system of the device are called System Parameters.

00 00 00	00 00 01	00-07	REVERB MACRO	(VARIATION = 00h) 00: Room 1 01: Room 2 02: Room 3 03: Hall 1 04: Hall 2 05: Plate 06: Delay 07: Panning Delay (VARIATION = 01H) 00: Small Church 03: Cathedral 04: Large Church	04	Hall 2
00 00 01#	00 00 01	00-7F	REVERB LEVEL	0-127	40	64
00 00 02	00 00 01	00-01	ROTARY ON/OFF	00: OFF/01: ON	01	ON
00 00 03	00 00 01	00-01	ROTARY SLOW/FAST	00: SLOW/01: FAST	01	FAST
00 00 20	00 00 01	00-01	CHORD INTELLIGENCE	00: OFF/01: ON	00	OFF
00 00 21	00 00 01	00-01	CHORD HOLD	00: OFF/01: ON	00	OFF
00 00 22	00 00 01	00-01	LEADING BASS	00: OFF/01: ON	00	OFF
00 00 23	00 00 01	00-7F	ACCOMP VOLUME	0-127	64	
00 00 24	00 00 01	00-7F	ACCOMP REVERB DEPTH	0-127	40	
00 00 25	00 00 01	00-7F	ACCOMP RHYTHM VOLUME	0-127	64	
00 00 26	00 00 01	00-7F	ACCOMP RHYTHM REVERB	0-127	40	
00 00 27	00 00 01	00-7F	ACCOMP BASS VOLUME	0-127	64	
00 00 28	00 00 01	00-7F	ACCOMP BASS REVERB	0-127	40	
00 00 29	00 00 01	00-07	WALL TYPE	00: Drapery 01: Carpet 02: Acoustic Tile 03: Wood 04: Brick 05: Plaster 06: Concrete Block 07: Marble	2	
00 00 2A	00 00 01	00-01	REVERB VARIATION	0-1	0	
00 00 2B	00 00 01	00-0B	TRANSPOSE	Ab-G	4	C
00 00 2C	00 00 01	00-01	SOLO TO LOWER	00: OFF/01: ON	00	OFF
00 00 2D	00 00 01	00-01	PEDAL TO LOWER	00: OFF/01: ON	00	OFF
00 00 2E	00 00 01	01-11	INITIAL TOUCH UPPER	01: OFF/02-11: 1-10	11	10
00 00 2F	00 00 01	01-11	INITIAL TOUCH LOWER	01: OFF/02-11: 1-10	11	10
00 00 30	00 00 01	00-01	BASS SPLIT	00: OFF/01: ON	00	OFF
00 00 31	00 00 01	1C-67	BASS SPLIT POINT	1C: E1-67: G7	52	C3
00 00 32	00 00 01	00-01	SOLO TO LOWER MODE	00: LAYER/01: SPLIT	01	SPLIT
00 00 33	00 00 01	21-60	SOLO SPLIT POINT	21: A1-60: C7	75	B4
00 00 34	00 00 01	00-01	HARMONY INTELLIGENCE SWITCH	00: OFF/01: ON	00	OFF
00 00 35	00 00 01	00-18	HARMONY INTELLIGENCE TYPE	00: DUET 01: TRADITIONAL 02: BROADWAY 03: OCTAVE 1 04: OCTAVE 2 05: 1 NOTE 06: DIXIELAND 07: ORGAN 08: 2 NOTES 09: SYNTH 0A: COMBO 0B: STRINGS 0C: 3 NOTES 0D: FLUTE 0E: HARP 0F: HYMN 10: HYMN 2 11: JAZZ SCAT 12: GOSPEL 13: BLOCK 14: 4 NOTES 15: BIG BAND		

				16: BRASS		
				17: COUNTRY		

●Part Parameters [Keyboard Part: Model ID = 62H]

Upper Part Information						
01 00 03	00 00 01	00-01	UPPER SUSTAIN SWITCH	00: OFF/01: ON	00	OFF
01 00 04	00 00 01	00-02	UPPER SUSTAIN LENGTH	00: SHORT	02	LONG
				01: MIDDLE		
				02: LONG		
01 00 05	00 00 01	00-01	GLIDE	00: OFF/01: ON	00	OFF
p...PART NUMBER (1-3),						
		Organ Part	p = 0			
		Symphonic Part	p = 1			
		Orchestral Part	p = 2			
01 0p 00	00 00 01	00-01	MUTE	00: OFF/01: MUTE	00	OFF
01 0p 01	00 00 03	00-7F	TONE NUMBER	P.C. VALUE	00	
01 0p 02#		00-7F	BANK SELECT MSB	CC#00 VALUE	00	
01 0p 03#		00-7F	BANK SELECT LSB	CC#20 VALUE	00	
01 0p 04	00 00 01	00-7F	VOLUME	0-127	64	
01 0p 05	00 00 01	00-7F	REVERB DEPTH	0-127	40	
01 0p 06	00 00 01	00-01	CHORUS SWITCH	00: 0FF/01: ON	OFF	
01 0p 07	00 00 01	28-58	KEY SHIFT	-24 - +24	40	
Lower Part Information						
01 10 00	00 00 01	00-01	LOWER HOLD	00: OFF/01: ON	00	OFF
01 10 03	00 00 01	00-01	LOWER SUSTAIN SWITCH	00: OFF/01: ON	00	OFF
01 10 04	00 00 01	00-02	LOWER SUSTAIN LENGTH	00: SHORT	01	MIDDLE
				01: MIDDLE		
				02: LONG		
01 10 05	00 00 01	00-01	GLIDE	00: OFF/01: ON	00	OFF
p...PART NUMBER (1-3),						
		Organ Part	p = 0			
		Symphonic Part	p = 1			
		Orchestral Part	p = 2			
01 1p 00	00 00 01	00-01	MUTE	00: OFF/01: MUTE	00	OFF
01 1p 01	00 00 03	00-7F	TONE NUMBER	P.C. VALUE	00	
01 1p 02#		00-7F	BANK SELECT MSB	CC#00 VALUE	00	
01 1p 03#		00-7F	BANK SELECT LSB	CC#20 VALUE	00	
01 1p 04	00 00 01	00-7F	VOLUME	0-127	64	
01 1p 05	00 00 01	00-7F	REVERB DEPTH	0-127	40	
01 1p 06	00 00 01	00-01	CHORUS SWITCH	00: 0FF/01: ON	OFF	
01 1p 07	00 00 01	28-58	KEY SHIFT	-24 - +24	40	
Pedal Bass Part Information						
01 20 00	00 00 01	00-01	PEDAL BASS HOLD	00: OFF/01: ON	00	OFF
01 20 01	00 00 01	00-01	PEDAL BASS MODE	00: MONO/01: POLY	00	MONO
01 20 03	00 00 01	00-01	PEDAL SUSTAIN SWITCH	00: OFF/01: ON	01	ON
01 20 04	00 00 01	00-02	PEDAL SUSTAIN LENGTH	00: SHORT	01	MIDDLE
				01: MIDDLE		
				02: LONG		
01 20 05	00 00 01	00-01	GLIDE	00: OFF/01: ON	00	OFF
p...PART NUMBER (1-2),						
		Organ Part	p = 0			
		Orchestral Part	p = 2			
01 2p 00	00 00 01	00-01	MUTE	OFF/MUTE	00	OFF
01 2p 01	00 00 03	00-7F	TONE NUMBER	P.C. VALUE	00	
01 2p 02#		00-7F	BANK SELECT MSB	CC#00 VALUE	00	
01 2p 03#		00-7F	BANK SELECT LSB	CC#20 VALUE	00	
01 2p 04	00 00 01	00-7F	VOLUME	0-127	100	
01 2p 05	00 00 01	00-7F	REVERB DEPTH	0-127	64	
01 2p 07	00 00 01	28-58	KEY SHIFT	-24 - +24	00	
Solo Part Information						
01 30 01	00 00 01	00-01	SOLO MODE	00: MONO/01: POLY	00	MONO
01 30 02	00 00 01	00-01	SOLO TYPE	00: TOPNOTE/01: LASTNOTE	00	TOP NOTE
01 31 00	00 00 01	00-01	MUTE	00: OFF/01: MUTE	00	OFF
01 31 01	00 00 03	00-7F	TONE NUMBER	P.C. VALUE	00	
01 31 02#		00-7F	BANK SELECT MSB	CC#20 VALUE	00	
01 31 03#		00-7F	BANK SELECT LSB	CC#00 VALUE	00	
01 31 04	00 00 01	00-7F	VOLUME	0-127	100	
01 31 05	00 00 01	00-7F	REVERB DEPTH	0-127	64	
01 31 07	00 00 01	28-58	KEY SHIFT	-24 - +24	00	
Manual Drum Part Information						
01 41 00	00 00 01	00-01	MUTE	OFF/MUTE	00	OFF

01 41 01	00 00 03	00-7F	RHYTHM SET NUMBER	P.C. VALUE	00	
01 41 02#		00-7F	BANK SELECT MSB	CC#00 VALUE	00	
01 41 03#		00-7F	BANK SELECT LSB	CC#20 VALUE	00	
01 41 04	00 00 01	00-7F	VOLUME	0-127	100	
01 41 05	00 00 01	00-7F	REVERB DEPTH	0-127	64	

Manual Percussion Part Information

01 51 00	00 00 01	00-01	MUTE	OFF/MUTE	00	OFF
01 51 01	00 00 03	00-7F	RHYTHM SET NUMBER	P.C. VALUE	00	
01 51 02#		00-7F	BANK SELECT MSB	CC#00 VALUE	00	
01 51 03#		00-7F	BANK SELECT LSB	CC#20 VALUE	00	
01 51 04	00 00 01	00-7F	VOLUME	0-127	100	
01 51 05	00 00 01	00-7F	REVERB DEPTH	0-127	64	

Footage Information

x...KEYBOARD NUMBER (0-1),
Upper Keyboardk = 0
Lower Keyboardk = 1

02 0k 00	00 00 01	00-7F	FOOTAGE MUTE	00 (OFF), 7F(ON)	00	0FF
02 0k 01	00 00 01	00-7F	FOOTAGE LEVEL	00 - 7F	00	OFF
02 0k 02	00 00 0B	00-7F	FOOTAGE SET	00: Flute	00	Flute
				02: Pipe *		
				03: Theater *		
02 0k 03#		00-7F	FOOTAGELEVEL 16′	00 (OFF), 0F (ON)	00	OFF
02 0k 04#		00-7F	FOOTAGELEVEL 5+1/3′	00 (OFF), 0F (ON)	00	OFF
02 0k 05#		00-7F	FOOTAGELEVEL 8′	00 (OFF), 0F (ON)	00	OFF
02 0k 06#		00-7F	FOOTAGELEVEL 4′	00 (OFF), 0F (ON)	00	OFF
02 0k 07#		00-7F	FOOTAGELEVEL 2+2/3′	00 (OFF), 0F (ON)	00	OFF
02 0k 08#		00-7F	FOOTAGELEVEL 2′	00 (OFF), 0F (ON)	00	OFF
02 0k 09#		00-7F	FOOTAGELEVEL 1+3/5′	00 (OFF), 0F (ON)	00	OFF
02 0k 0A#		00-7F	FOOTAGELEVEL 1+1/3′	00 (OFF), 0F (ON)	00	OFF
02 0k 0B#		00-7F	FOOTAGELEVEL 1′	00 (OFF), 0F (ON)	00	OFF
02 0k 0C#		00-7F	EXTRAFOOTAGE	00 (OFF), 0F (ON)	00	OFF
02 0k 0D#		00-7F	PERCUSSION	00 (OFF)	00	OFF
					01 (4, Short)	
					02 (2+2/3, Short)	
					41 (4, Long)	
					42 (2+2/3, Long)	
02 0k 0E#		00-7F	REVERB SEND	00 - 7F	00	OFF

* Not received by the AT-80SL.

●System Parameters [GS Part: Model ID = 42H]

Not Received in Keyboard Part.

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 00 00	00 00 04	0018-07E8	MASTER TUNE	-100.0 - +100.0 [cent]	00 04 00 00	0 [cent]
40 00 01#			Use nibblized data.			
40 00 02#						
40 00 03#						

* Refer to section 6. Supplementary material, “About tuning” (p. 18).

40 00 04	00 00 01	00-7F	MASTER VOLUME	0-127	7F	127
				(= F0 7F 7F 04 01 00 vv F7)		
40 00 05	00 00 01	28-58	MASTER KEY-SHIFT	-24 - +24 [semitones]	40	0 [semitones]
40 00 06	00 00 01	01-7F	MASTER PAN	-63 (LEFT) - +63 (RIGHT)	40	0 (CENTER)
40 00 7F	00 00 01	00	MODE SET	00 = GS Reset		
				(Rx. only)	127 = Exit GS	

* Refer to “System exclusive messages related to mode settings” (p. 5).

40 01 10	00 00 10	00-40	VOICE RESERVE	Part 10 (Drum Part)	02	2
40 01 11#				Part 1	06	6
40 01 12#				Part 2	02	2
40 01 13#				Part 3	02	2
40 01 14#				Part 4	02	2
40 01 15#				Part 5	02	2
40 01 16#				Part 6	02	2
40 01 17#				Part 7	02	2
40 01 18#				Part 8	02	2
40 01 19#				Part 9	02	2
40 01 1A#				Part 11	00	0
40 01:#				:		
40 01 1F#				Part 16	00	0

* The sum total of voices in the voice reserve function must be equal to or less than the number of the maximum polyphony. The maximum polyphony of the AT-90SL/80SL is 64. For compatibility with other GS models, it is recommended that the maximum polyphony be equal or less than 24.

40 01 30	00 00 01	00-07	REVERB MACRO	00: Room 1 01: Room 2 02: Room 3 03: Hall 1 04: Hall 2 05: Plate 06: Delay 07: Panning Delay	04	Hall 2
40 01 31	00 00 01	00-07	REVERB CHARACTER	0-7	04	4
40 01 32	00 00 01	00-07	REVERB PRE-LPF	0-7	00	0
40 01 33	00 00 01	00-7F	REVERB LEVEL	0-127	40	64
40 01 34	00 00 01	00-7F	REVERB TIME	0-127	40	64
40 01 35	00 00 01	00-7F	REVERB DELAY FEEDBACK	0-127	00	0

REVERB MACRO is a macro parameter that allows global setting of reverb parameters. When you select the reverb type with REVERB MACRO, each reverb parameter will be set to the most suitable value.
REVERB CHARACTER is a parameter that changes the reverb algorithm. The value of REVERB CHARACTER corresponds to the REVERB MACRO of the same number.

40 01 38	00 00 01	00-07	CHORUS MACRO	00: Chorus 1 01: Chorus 2 02: Chorus 3 03: Chorus 4 04: Feedback Chorus 05: Flanger 06: Short Delay 07: Short Delay (FB)	02	Chorus 3
40 01 39	00 00 01	00-07	CHORUS PRE-LPF	0-7	00	0
40 01 3A	00 00 01	00-7F	CHORUS LEVEL	0-127	40	64
40 01 3B	00 00 01	00-7F	CHORUS FEEDBACK	0-127	08	8
40 01 3C	00 00 01	00-7F	CHORUS DELAY	0-127	50	80
40 01 3D	00 00 01	00-7F	CHORUS RATE	0-127	03	3
40 01 3E	00 00 01	00-7F	CHORUS DEPTH	0-127	13	19
40 01 3F	00 00 01	00-7F	CHORUS SEND LEVEL TO REVERB	0-127	00	0

CHORUS MACRO is a macro parameter that allows global setting of chorus parameters. When you use CHORUS MACRO to select the chorus type, each chorus parameter will be set to the most suitable value.

●Part Parameters [GS Part: Model ID = 42H]

AT-90SL/80SL has 16 parts. Parameters that can be set individually for each Part are called Part parameters.
If you use exclusive messages to set Part parameters, specify the address by Block number rather than Part Number (normally the same number as the MIDI channel). The Block number can be specified as one of 16 blocks, from 0 (H) to F (H).

The relation between Part number and Block number is as follows.

x...BLOCK NUMBER (0-F),Part 1 (MIDI ch = 1) x = 1
Part 2 (MIDI ch = 2) x = 2
: : :
Part 9 (MIDI ch = 9) x = 9
Part10 (MIDI ch = 10) x = 0
Part11 (MIDI ch = 11) x = A
Part12 (MIDI ch = 12) x = B
: : :
Part16 (MIDI ch = 16) x = F

In the following map, the Control Change controller number is expressed by the CC#.

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 1x 00	00 00 02	00-7F	TONE NUMBER	CC#00 VALUE 0-127	00	0
40 1x 01#		00-7F		P.C. VALUE 1-128	00	1
40 1x 02	00 00 01	00-10	Rx. CHANNEL	1-16, OFF	Same as the Part Number	
40 1x 03	00 00 01	00-01	Rx. PITCH BEND	OFF/ON	01	ON
40 1x 04	00 00 01	00-01	Rx. CH PRESSURE (CAf)	OFF/ON	01	ON
40 1x 05	00 00 01	00-01	Rx. PROGRAM CHANGE	OFF/ON	01	ON
40 1x 06	00 00 01	00-01	Rx. CONTROL CHANGE	OFF/ON	01	ON
40 1x 07	00 00 01	00-01	Rx. POLY PRESSURE (PAf)	OFF/ON	01	ON
40 1x 08	00 00 01	00-01	Rx. NOTE MESSAGE	OFF/ON	01	ON
40 1x 09	00 00 01	00-01	Rx. RPN	OFF/ON	01	ON
40 1x 0A	00 00 01	00-01	Rx. NRPN	OFF/ON	00 (01*)	OFF (ON*)

Rx. NRPN is set to OFF by power-on or by receiving “Turn General MIDI System On,” and it will be set ON when “GS RESET” is received.

40 1x 0B	00 00 01	00-01	Rx. MODULATION	OFF/ON	01	ON
40 1x 0C	00 00 01	00-01	Rx. VOLUME	OFF/ON	01	ON
40 1x 0D	00 00 01	00-01	Rx. PANPOT	OFF/ON	01	ON
40 1x 0E	00 00 01	00-01	Rx. EXPRESSION	OFF/ON	01	ON
40 1x 0F	00 00 01	00-01	Rx. HOLD1	OFF/ON	01	ON
40 1x 10	00 00 01	00-01	Rx. PORTAMENTO	OFF/ON	01	ON
40 1x 11	00 00 01	00-01	Rx. SOSTENUTO	OFF/ON	01	ON
40 1x 12	00 00 01	00-01	Rx. SOFT	OFF/ON	01	ON

40 1x 13	00 00 01	00-01	MONO/POLY MODE (= CC# 126 01 / CC# 127 00)	Mono/Poly	01	Poly
40 1x 15	00 00 01	00-02	USE FOR RHYTHM PART 1 = MAP1 2 = MAP2	0 = OFF 01 at x = 0	00 at x ≠ 0 MAP1 at x = 0	OFF at x ≠ 0

This parameter sets the Drum Map of the Part used as the Drum Part. AT-90SL/80SL can simultaneously (in different Parts) use up to two Drum Maps (MAP1, MAP2). With the initial settings, Part10 (MIDI CH = 10, x = 0) is set to MAP1 (1), and other Parts are set to normal instrumental Parts (OFF (0)).

40 1x 16	00 00 01	28-58	PITCH KEY SHIFT	-24 - +24 [semitones]	40	0 [semitones]
40 1x 17	00 00 02	08-F8	PITCH OFFSET FINE	-12.0 - +12.0 [Hz]	08 00	0 [Hz]
40 1x 18#			Use nibblized data.			

PITCH OFFSET FINE allows you to alter, by a specified frequency amount, the pitch at which notes will sound. This parameter differs from the conventional Fine Tuning (RPN #1) parameter in that the amount of frequency alteration (in Hertz) will be identical no matter which note is played. When a multiple number of Parts, each of which has been given a different setting for PITCH OFFSET FINE, are sounded by means of an identical note number, you can obtain a Celeste effect.

40 1x 19	00 00 01	00-7F	PART LEVEL (= CC# 7)	0-127	64	100
40 1x 1A	00 00 01	00-7F	VELOCITY SENSE DEPTH	0-127	40	64
40 1x 1B	00 00 01	00-7F	VELOCITY SENSE OFFSET	0-127	40	64
40 1x 1C	00 00 01	00-7F	PART PANPOT (= CC# 10, except RANDOM)	-64 (RANDOM), -63 (LEFT) - +63 (RIGHT)	40	0 (CENTER)
40 1x 1D	00 00 01	00-7F	KEY RANGE LOW	(C-1)-(G9)	00	C-1
40 1x 1E	00 00 01	00-7F	KEY RANGE HIGH	(C-1)-(G9)	7F	G 9
40 1x 1F	00 00 01	00-5F	CC1 CONTROLLER NUMBER	0-95	10	16
40 1x 20	00 00 01	00-5F	CC2 CONTROLLER NUMBER	0-95	11	17
40 1x 21	00 00 01	00-7F	CHORUS SEND LEVEL (= CC# 93)	0-127	00	0
40 1x 22	00 00 01	00-7F	REVERB SEND LEVEL (= CC# 91)	0-127	28	40
40 1x 30	00 00 01	0E-72	TONE MODIFY 1 Vibrato rate (= NRPN# 8)	-50 - +50	40	0
40 1x 31	00 00 01	0E-72	TONE MODIFY 2 Vibrato depth (= NRPN# 9)	-50 - +50	40	0
40 1x 32	00 00 01	0E-72	TONE MODIFY 3 TVF cutoff frequency (= NRPN# 32)	-50 - +50	40	0
40 1x 33	00 00 01	0E-72	TONE MODIFY 4 TVF resonance (= NRPN# 33)	-50 - +50	40	0
40 1x 34	00 00 01	0E-72	TONE MODIFY 5 TVF&TVA Env.attack (= NRPN# 99)	-50 - +50	40	0
40 1x 35	00 00 01	0E-72	TONE MODIFY 6 TVF&TVA Env.decay (= NRPN# 100)	-50 - +50	40	0
40 1x 36	00 00 01	0E-72	TONE MODIFY 7 TVF&TVA Env.release (= NRPN# 102)	-50 - +50	40	0
40 1x 37	00 00 01	0E-72	TONE MODIFY 8 Vibrato delay (= NRPN# 10)	-50 - +50	40	0
40 1x 40	00 00 0C	00-7F	SCALE TUNING C	-64 - +63 [cent]	40	0 [cent]
40 1x 41#		00-7F	SCALE TUNING C#	-64 - +63 [cent]	40	0 [cent]
40 1x 42#		00-7F	SCALE TUNING D	-64 - +63 [cent]	40	0 [cent]
40 1x 43#		00-7F	SCALE TUNING D#	-64 - +63 [cent]	40	0 [cent]
40 1x 44#		00-7F	SCALE TUNING E	-64 - +63 [cent]	40	0 [cent]
40 1x 45#		00-7F	SCALE TUNING F	-64 - +63 [cent]	40	0 [cent]
40 1x 46#		00-7F	SCALE TUNING F#	-64 - +63 [cent]	40	0 [cent]
40 1x 47#		00-7F	SCALE TUNING G	-64 - +63 [cent]	40	0 [cent]
40 1x 48#		00-7F	SCALE TUNING G#	-64 - +63 [cent]	40	0 [cent]
40 1x 49#		00-7F	SCALE TUNING A	-64 - +63 [cent]	40	0 [cent]
40 1x 4A#		00-7F	SCALE TUNING A#	-64 - +63 [cent]	40	0 [cent]
40 1x 4B#		00-7F	SCALE TUNING B	-64 - +63 [cent]	40	0 [cent]

SCALE TUNING is a function that allows fine adjustment to the pitch of each note in the octave. The pitch of each identically-named note in all octaves will change simultaneously. A setting of ± 0 cent (40H) is equal temperament. Refer to section 6. Supplementary material, “About tuning” (p. 18).

40 2x 00	00 00 01	28-58	MOD PITCH CONTROL	-24 - +24 [semitone]	40	0 [semitones]
40 2x 01	00 00 01	00-7F	MOD TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40	0 [cent]
40 2x 02	00 00 01	00-7F	MOD AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40	0 [%]
40 2x 03	00 00 01	00-7F	MOD LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
40 2x 04	00 00 01	00-7F	MOD LFO1 PITCH DEPTH	0-600 [cent]	0A	47 [cent]
40 2x 05	00 00 01	00-7F	MOD LFO1 TVF DEPTH	0-2400 [cent]	00	0 [cent]
40 2x 06	00 00 01	00-7F	MOD LFO1 TVA DEPTH	0-100.0 [%]	00	0 [%]
40 2x 07	00 00 01	00-7F	MOD LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
40 2x 08	00 00 01	00-7F	MOD LFO2 PITCH DEPTH	0-600 [cent]	00	0 [cent]
40 2x 09	00 00 01	00-7F	MOD LFO2 TVF DEPTH	0-2400 [cent]	00	0 [cent]
40 2x 0A	00 00 01	00-7F	MOD LFO2 TVA DEPTH	0-100.0 [%]	00	0 [%]
40 2x 10	00 00 01	40-58	BEND PITCH CONTROL	0-24 [semitone]	42	2 [semitones]
40 2x 11	00 00 01	00-7F	BEND TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40	0 [cent]
40 2x 12	00 00 01	00-7F	BEND AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40	0 [%]
40 2x 13	00 00 01	00-7F	BEND LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]

40 2x 14	00 00 01	00-7F	BEND LFO1 PITCH DEPTH	0-600 [cent]	00	0 [cent]
40 2x 15	00 00 01	00-7F	BEND LFO1 TVF DEPTH	0-2400 [cent]	00	0 [cent]
40 2x 16	00 00 01	00-7F	BEND LFO1 TVA DEPTH	0-100.0 [%]	00	0 [%]
40 2x 17	00 00 01	00-7F	BEND LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
40 2x 18	00 00 01	00-7F	BEND LFO2 PITCH DEPTH	0-600 [cent]	00	0 [cent]
40 2x 19	00 00 01	00-7F	BEND LFO2 TVF DEPTH	0-2400 [cent]	00	0 [cent]
40 2x 1A	00 00 01	00-7F	BEND LFO2 TVA DEPTH	0-100.0 [%]	00	0 [%]
40 2x 20	00 00 01	28-58	CAf PITCH CONTROL	-24 - +24 [semitone]	40	0 [semitones]
40 2x 21	00 00 01	00-7F	CAf TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40	0 [cent]
40 2x 22	00 00 01	00-7F	CAf AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40	0 [%]
40 2x 23	00 00 01	00-7F	CAf LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
40 2x 24	00 00 01	00-7F	CAf LFO1 PITCH DEPTH	0-600 [cent]	00	0 [cent]
40 2x 25	00 00 01	00-7F	CAf LFO1 TVF DEPTH	0-2400 [cent]	00	0 [cent]
40 2x 26	00 00 01	00-7F	CAf LFO1 TVA DEPTH	0-100.0 [%]	00	0 [%]
40 2x 27	00 00 01	00-7F	CAf LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
40 2x 28	00 00 01	00-7F	CAf LFO2 PITCH DEPTH	0-600 [cent]	00	0 [cent]
40 2x 29	00 00 01	00-7F	CAf LFO2 TVF DEPTH	0-2400 [cent]	00	0 [cent]
40 2x 2A	00 00 01	00-7F	CAf LFO2 TVA DEPTH	0-100.0 [%]	00	0 [%]
40 2x 30	00 00 01	28-58	PAf PITCH CONTROL	-24 - +24 [semitone]	40	0 [semitones]
40 2x 31	00 00 01	00-7F	PAf TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40	0 [cent]
40 2x 32	00 00 01	00-7F	PAf AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40	0 [%]
40 2x 33	00 00 01	00-7F	PAf LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
40 2x 34	00 00 01	00-7F	PAf LFO1 PITCH DEPTH	0-600 [cent]	00	0 [cent]
40 2x 35	00 00 01	00-7F	PAf LFO1 TVF DEPTH	0-2400 [cent]	00	0 [cent]
40 2x 36	00 00 01	00-7F	PAf LFO1 TVA DEPTH	0-100.0 [%]	00	0 [%]
40 2x 37	00 00 01	00-7F	PAf LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
40 2x 38	00 00 01	00-7F	PAf LFO2 PITCH DEPTH	0-600 [cent]	00	0 [cent]
40 2x 39	00 00 01	00-7F	PAf LFO2 TVF DEPTH	0-2400 [cent]	00	0 [cent]
40 2x 3A	00 00 01	00-7F	PAf LFO2 TVA DEPTH	0-100.0 [%]	00	0 [%]
40 2x 40	00 00 01	28-58	CC1 PITCH CONTROL	-24 - +24 [semitone]	40	0 [semitones]
40 2x 41	00 00 01	00-7F	CC1 TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40	0 [cent]
40 2x 42	00 00 01	00-7F	CC1 AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40	0 [%]
40 2x 43	00 00 01	00-7F	CC1 LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
40 2x 44	00 00 01	00-7F	CC1 LFO1 PITCH DEPTH	0-600 [cent]	00	0 [cent]
40 2x 45	00 00 01	00-7F	CC1 LFO1 TVF DEPTH	0-2400 [cent]	00	0 [cent]
40 2x 46	00 00 01	00-7F	CC1 LFO1 TVA DEPTH	0-100.0 [%]	00	0 [%]
40 2x 47	00 00 01	00-7F	CC1 LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
40 2x 48	00 00 01	00-7F	CC1 LFO2 PITCH DEPTH	0-600 [cent]	00	0 [cent]
40 2x 49	00 00 01	00-7F	CC1 LFO2 TVF DEPTH	0-2400 [cent]	00	0 [cent]
40 2x 4A	00 00 01	00-7F	CC1 LFO2 TVA DEPTH	0-100.0 [%]	00	0 [%]
40 2x 50	00 00 01	28-58	CC2 PITCH CONTROL	-24 - +24 [semitone]	40	0 [semitones]
40 2x 51	00 00 01	00-7F	CC2 TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40	0 [cent]
40 2x 52	00 00 01	00-7F	CC2 AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40	0 [%]
40 2x 53	00 00 01	00-7F	CC2 LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
40 2x 54	00 00 01	00-7F	CC2 LFO1 PITCH DEPTH	0-600 [cent]	00	0 [cent]
40 2x 55	00 00 01	00-7F	CC2 LFO1 TVF DEPTH	0-2400 [cent]	00	0 [cent]
40 2x 56	00 00 01	00-7F	CC2 LFO1 TVA DEPTH	0-100.0 [%]	00	0 [%]
40 2x 57	00 00 01	00-7F	CC2 LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
40 2x 58	00 00 01	00-7F	CC2 LFO2 PITCH DEPTH	0-600 [cent]	00	0 [cent]
40 2x 59	00 00 01	00-7F	CC2 LFO2 TVF DEPTH	0-2400 [cent]	00	0 [cent]
40 2x 5A	00 00 01	00-7F	CC2 LFO2 TVA DEPTH	0-100.0 [%]	00	0 [%]

●Drum Setup Parameters [GS Part: Model ID = 42H]

m: Map number (0 = MAP1, 1 = MAP2)
rr: drum part note number (00H-7FH)

Address (H)	Size (H)	Data (H)	Parameter	Description
41 m1 rr	00 00 01	00-7F	PLAY NOTE NUMBER	Pitch coarse
41 m2 rr	00 00 01	00-7F	LEVEL	TVA level
			(= NRPN# 26)	
41 m3 rr	00 00 01	00-7F	ASSIGN GROUP NUMBER	Non, 1-127
41 m4 rr	00 00 01	00-7F	PANPOT	-64 (RANDOM), -63 (LEFT) - +63 (RIGHT)
			(= NRPN# 28, except RANDOM)	
41 m5 rr	00 00 01	00-7F	REVERB SEND LEVEL	0.0-1.0
			(= NRPN# 29)	Multiplicand of the part reverb depth
41 m6 rr	00 00 01	00-7F	CHORUS SEND LEVEL	0.0-1.0
			(= NRPN# 30)	Multiplicand of the part chorus depth
41 m7 rr	00 00 01	00-01	Rx. NOTE OFF	OFF/ON
41 m8 rr	00 00 01	00-01	Rx. NOTE ON	OFF/ON

* When the Drum Set is changed, DRUM SETUP PARAMETER values will all be initialized.

6. Supplementary material

●Decimal and Hexadecimal table

(An `H' is appended to the end of numbers in hexadecimal notation.)

In MIDI documentation, data values and addresses/sizes of Exclusive messages, etc. are expressed as hexadecimal values for each 7 bits. The following table shows how these correspond to decimal numbers.
The following table shows how these correspond to decimal numbers.

Dec.	Hex.	Dec.	Hex.	Dec.	Hex.	Dec.	Hex.
0	00H	32	20H	64	40H	96	60H
1	01H	33	21H	65	41H	97	61H
2	02H	34	22H	66	42H	98	62H
3	03H	35	23H	67	43H	99	63H
4	04H	36	24H	68	44H	100	64H
5	05H	37	25H	69	45H	101	65H
6	06H	38	26H	70	46H	102	66H
7	07H	39	27H	71	47H	103	67H
8	08H	40	28H	72	48H	104	68H
9	09H	41	29H	73	49H	105	69H
10	0AH	42	2AH	74	4AH	106	6AH
11	0BH	43	2BH	75	4BH	107	6BH
12	0CH	44	2CH	76	4CH	108	6CH
13	0DH	45	2DH	77	4DH	109	6DH
14	0EH	46	2EH	78	4EH	110	6EH
15	0FH	47	2FH	79	4FH	111	6FH
16	10H	48	30H	80	50H	112	70H
17	11H	49	31H	81	51H	113	71H
18	12H	50	32H	82	52H	114	72H
19	13H	51	33H	83	53H	115	73H
20	14H	52	34H	84	54H	116	74H
21	15H	53	35H	85	55H	117	75H
22	16H	54	36H	86	56H	118	76H
23	17H	55	37H	87	57H	119	77H
24	18H	56	38H	88	58H	120	78H
25	19H	57	39H	89	59H	121	79H
26	1AH	58	3AH	90	5AH	122	7AH
27	1BH	69	3BH	91	5BH	123	7BH
28	1CH	60	3CH	92	5CH	124	7CH
29	1DH	61	3DH	93	5DH	125	7DH
30	1EH	62	3EH	94	5EH	126	7EH
31	1FH	63	3FH	95	5FH	127	7FH

* Decimal values such as MIDI channel, bank select, and program change are listed as one (1) greater than the values given in the above table.
* A 7-bit byte can express data in the range of 128 steps. For data where greater precision is required, we must use two or more bytes. For example, two hexadecimal numbers aa bbH expressing two 7-bit bytes would indicate a value of aa x 128 + bb.
* In the case of values which have a ± sign, 00H = -64, 40H = ± 0, and 7FH = +63, so that the decimal expression would be 64 less than the value given in the above chart. In the case of two types, 00 00H = -8192, 40 00H = ±0, and 7F 7FH = +8191. For example if aa bbH were expressed as decimal, this would be aa bbH - 40 00H = aa x 128 + bb - 64 x 128.
* Data marked "nibbled" is expressed in hexadecimal in 4-bit units. A value expressed as a 2-byte nibble 0a 0bH has the value of a x 16 + b.

<Example1> What is the decimal expression of 5AH?

From the preceding table, 5AH = 90

<Example2> What is the decimal expression of the value 12 34H given as hexadecimal for each 7 bits?

From the preceding table, since 12H = 18 and 34H = 52
18 x 128 + 52 = 2356

<Example3> What is the decimal expression of the nibbled value 0A 03 09 0D?

From the preceding table, since 0AH = 10, 03H = 3, 09H = 9, 0DH = 13
((10 x 16 + 3) x 16 + 9) x 16 + 13 = 41885

<Example4> What is the nibbled expression of the decimal value 1258?

16) 1258
16) 78 ... 10
16) 4 ... 14
0 ... 4

Since from the preceding table, 0 = 00H, 4 = 04H, 14 = 0EH, 10 = 0AH, the answer is 00 04 0E 0AH.

●Examples of actual MIDI messages

<Example1> 95 3E 5F

9n is the Note-on status, and n is the MIDI channel number. Since 5H = 5, 3EH = 62, and 5FH = 95, this is a Note-on message with MIDI CH = 6, note number 62 (note name is D4), and velocity 95.

<Example2> CE 49

CnH is the Program Change status, and n is the MIDI channel number. Since EH = 14 and 49H = 73, this is a Program Change message with MIDI CH = 15, program number 74 (Flute in GS).

<Example3> EB 00 28

EnH is the Pitch Bend Change status, and n is the MIDI channel number. The 2nd byte (00H = 0) is the LSB and the 3rd byte (28H = 40) is the MSB, but Pitch Bend Value is a signed number in which 40 00H (= 64 x 128 + 0 = 8192) is 0, so this Pitch Bend Value is
28 00H - 40 00H = 40 x 128 + 0 - (64 x 128 + 0) = 5120 - 8192 = -3072
If the Pitch Bend Sensitivity is set to 2 semitones, -8192 (00 00H) will cause the pitch to change -200 cents, so in this case -200 x (-3072) / (-8192) = -75 cents of Pitch Bend is being applied to MIDI channel 12.

<Example4> B6 64 00 65 00 06 0C 26 00 64 7F 65 7F

BnH is the Control Change status, and n is the MIDI channel number. For Control Changes, the 2nd byte is the control number, and the 3rd byte is the value. In a case in which two or more messages consecutive messages have the same status, MIDI has a provision called "running status" which allows the status byte of the second and following messages to be omitted. Thus, the above messages have the following meaning.

B6	64 00	MIDI ch.7, lower byte of RPN parameter number: 00H
(B6)	65 00	(MIDI ch.7) upper byte of RPN parameter number: 00H
(B6)	06 0C	(MIDI ch.7) upper byte of parameter value: 0CH
(B6)	26 00	(MIDI ch.7) lower byte of parameter value: 00H
(B6)	64 7F	(MIDI ch.7) lower byte of RPN parameter number: 7FH
(B6)	65 7F	(MIDI ch.7) upper byte of RPN parameter number: 7FH

In other words, the above messages specify a value of 0C 00H for RPN parameter number 00 00H on MIDI channel 4, and then set the RPN parameter number to 7F 7FH.

RPN parameter number 00 00H is Pitch Bend Sensitivity, and the MSB of the value indicates semitone units, so a value of 0CH = 12 sets the maximum pitch bend range to ±12 semitones (1 octave). (On this instrument the LSB of Pitch Bend Sensitivity is ignored, but the LSB should be transmitted anyway (with a value of 0) so that operation will be correct on any device.)

Once the parameter number has been specified for RPN or NRPN, all Data Entry messages transmitted on that same channel will be valid, so after the desired value has been transmitted, it is a good idea to set the parameter number to 7F 7FH to prevent accidents. This is the reason for the (B6) 64 7F (B6) 65 7F at the end.

It is not desirable for performance data (such as Standard MIDI File data) to contain many events with running status as given in <Example 4>. This is because if playback is halted during the song and then rewound or fast-forwarded, the sequencer may not be able to transmit the correct status, and the sound source will then misinterpret the data. Take care to give each event its own status.

It is also necessary that the RPN or NRPN parameter number setting and the value setting be done in the proper order. On some sequencers, events occurring in the same (or consecutive) clock may be transmitted in an order different than the order in which they were received. For this reason it is a good idea to slightly skew the time of each event (about 1 tick for TPQN = 96, and about 5 ticks for TPQN = 480).

TPQN: Ticks Per Quarter Note

Example of an Exclusive message and calculating a Checksum
Roland Exclusive messages are transmitted with a checksum at the end (before F7) to make sure that the message was correctly received. The value of the checksum is determined by the address and data (or size) of the transmitted exclusive message.

How to calculate the checksum (hexadecimal numbers are indicated by `H')
The checksum is a value derived by adding the address, size and checksum itself and inverting the lower 7 bits.
Here's an example of how the checksum is calculated. We will assume that in the exclusive message we are transmitting, the address is aa bb ccH and the data or size is dd ee ffH.

aa + bb + cc + dd + ee + ff = sum
sum / 128 = quotient ... remainder
128 - remainder = checksum

<Example1> Setting REVERB MACRO to ROOM 3 (GS Part)

According to the "Parameter Address Map," the REVERB MACRO Address is 40 01 30H, and ROOM 3 is a value of 02H. Thus,

F0	41	10	42	12	40 01 30	02	??	F7
(1)	(2)	(3)	(4)	(5)	Address	data	Checksum	(6)

(1) Exclusive Status, (2) ID (Roland), (3) Device ID (17), (4) Model ID (GS),
(5) Command ID (DT1), (6) End of Exclusive

Next we calculate the checksum.

40H + 01H + 30H + 02H = 64 + 1 + 48 + 2 = 115 (sum)
115 (sum) / 128 = 0 (quotient) ... 115 (remainder)
checksum = 128 - 115 (remainder) = 13 = 0DH

This means that F0 41 10 42 12 40 01 30 02 0D F7 is the message we transmit.

<Example2>

With "Grand Piano" set as the tone for the Upper Orchestral part

* Keyboard part tone settings are enabled when MIDI IN Mode is set to MODE 2.

According to the "Parameter Address Map," since the address for the tone number in the upper part information for the part parameter [Keyboard Part] is 01 0p 01H and the Orchestral Part Offset Value is p = 3, the address is then 01 03 01H. Since the tone map (Keyboard part) (p. 18) gives TONE NUMBER = 38H, BANK SELECT MSB = 02H, BANK SELECT LSB = 00H for the "Grand Piano" tone number, (we get the following):

FO	41	10	62	12	01 03 01	38 02 00	??	F7
(1)	(2)	(3)	(4)	(5)	Address	data	Checksum	(6)

(1) Exclusive Status, (2) ID (Roland), (3) Device ID (17), (4) Model ID (Atelier), (5) Command ID (DT1), (6) End of Exclusive

Next we calculate the checksum.

01H + 03H + 01H + 38H + 02 + 00H = 1 + 3 + 1 + 56 + 2 + 0 = 63 (sum)
63 (sum) / 128 = 0 (quotient) ... 63 (remainder)
checksum = 128 - 63 (remainder) = 65 = 41H

This means that F0 41 10 62 12 01 03 01 38 02 00 41 F7 is the message we transmit.

●About tuning

In MIDI, individual Parts are tuned by sending RPN #1 (Master Fine Tuning) to the appropriate MIDI channel.
In MIDI, an entire device is tuned by either sending RPN #1 to all MIDI channels being used, or by sending a System Exclusive MASTER TUNE (address 40 00 00H).
RPN #1 allows tuning to be specified in steps of approximately 0.012 cents (to be precise, 100/8192 cent), and System Exclusive MASTER TUNE allows tuning in steps of 0.1 cent. One cent is 1/100th of a semitone.
The values of RPN #1 (Master Fine Tuning) and System Exclusive MASTER TUNE are added together to determine the actual pitch sounded by each Part.

Frequently used tuning values are given in the following table for your reference. Values are in hexadecimal (decimal in parentheses).

Hz in A4	cent	RPN #1	Sys. Ex. 40 00 00
445.0	+19.56	4C 43 (+1603)	00 04 0C 04 (+196)
444.0	+15.67	4A 03 (+1283)	00 04 09 0D (+157)
443.0	+11.76	47 44 (+ 964)	00 04 07 06 (+118)
442.0	+ 7.85	45 03 (+ 643)	00 04 04 0F (+ 79)
441.0	+ 3.93	42 42 (+ 322)	00 04 02 07 (+ 39)
440.0	0.00	40 00 (0)	00 04 00 00 (0)
439.0	− 3.94	3D 3D (− 323)	00 03 0D 09 (− 39)
438.0	− 7.89	3A 7A (− 646)	00 03 0B 01 (− 79)

<Example> Set the tuning of MIDI channel 3 to A4 = 442.0 Hz

Send RPN#1 to MIDI channel 3. From the above table, the value is 45 03H.

B2	64 00	MIDI ch.3, lower byte of RPN parameter number: 00H
(B2)	65 01	(MIDI ch.3) upper byte of RPN parameter number: 01H
(B2)	06 45	(MIDI ch.3) upper byte of parameter value: 45H
(B2)	26 03	(MIDI ch.3) lower byte of parameter value: 03H
(B2)	64 7F	(MIDI ch.3) lower byte of RPN parameter number: 7FH
(B2)	65 7F	(MIDI ch.3) upper byte of RPN parameter number: 7FH

7. Tone List

●Tone List (Keyboard Part)

* Program Change messages cannot be used to make these changes. Make the settings using the System Exclusive messages Individual Parameter and Part Parameter [Keyboard Part: Model ID = 62H] (p. 11). Refer to the example of the Grand Piano tone in the Upper Orchestral Part in 6. Reference "How to Calculate the Checksum" <Example 2>.

TONE NUMBER	BANK SELECT MSB	BANK SELECT LSB	VOICE NAME
00H	00H	00H	Full Organ1
02H	00H	00H	Full Organ2
04H	00H	00H	Full Organ3
01H	00H	00H	Full Organ4
03H	00H	00H	Full Organ5
05H	00H	00H	Full Organ6
20H	00H	00H	Full Organ7
20H	01H	00H	Full Organ8
20H	02H	00H	Full Organ9
00H	01H	00H	Ballad Organ
00H	02H	00H	GoodOldOrgan
06H	00H	00H	Jazz Organ1
08H	00H	00H	Jazz Organ2
0AH	00H	00H	Jazz Organ3
07H	00H	00H	Jazz Organ4
09H	00H	00H	Jazz Organ5
0BH	00H	00H	Jazz Organ6
06H	01H	00H	ComboJazzOrg
06H	02H	00H	LightJazzOrg
0CH	00H	00H	Rock Organ1
0DH	00H	00H	Rock Organ2
0EH	00H	00H	Lower Organ1
10H	00H	00H	Lower Organ2
12H	00H	00H	Lower Organ3
0FH	00H	00H	Lower Organ4
11H	00H	00H	Lower Organ5
13H	00H	00H	Lower Organ6
0EH	01H	00H	Manual Bass
14H	00H	00H	Pipe Organ1
16H	00H	00H	Pipe Organ2
18H	00H	00H	Pipe Organ3
15H	00H	00H	Pipe Organ4
17H	00H	00H	Pipe Organ5
19H	00H	00H	Pipe Organ6
21H	00H	00H	Pipe Organ7
16H	01H	00H	AEx Pipe Mix
15H	01H	00H	AEx PipeOrg
14H	02H	00H	Diapason 8'
14H	01H	00H	FluteCeleste
21H	01H	00H	Gemshorn 8'
21H	02H	00H	Trompet 8'
21H	03H	00H	Hautbois 8'
21H	04H	00H	Viola 8'
21H	05H	00H	ViolaCeleste
21H	06H	00H	Bombarde16'
22H	0AH	00H	T.ViolCelest
22H	01H	00H	T.String 8'
22H	0BH	00H	T.Vox Humana
22H	02H	00H	VoxHumana 8'
22H	03H	00H	T.Tuba 8'
22H	04H	00H	T.Trumpet 8'
22H	05H	00H	T.Sax 8'
22H	06H	00H	T.Oboe 8'
22H	09H	00H	T.Kinura 8'

TONE NUMBER	BANK SELECT MSB	BANK SELECT LSB	VOICE NAME
22H	07H	00H	T.Krumet 8'
22H	08H	00H	Eng.Horn 8'
1AH	02H	00H	T.ConcertFlt
1AH	01H	00H	Tibia 8'
1AH	00H	00H	Theater Or.1
1CH	00H	00H	Theater Or.2
1EH	00H	00H	Theater Or.3
1BH	00H	00H	Theater Or.4
1DH	00H	00H	Theater Or.5
1FH	00H	00H	Theater Or.6
22H	00H	00H	Theater Or.7
1BH	01H	00H	Theater Ens.
1CH	01H	00H	LyricTheater
1DH	01H	00H	TheaterQuint
1EH	02H	00H	AEx T.Mix
1EH	01H	00H	AEx Theater
23H	00H	00H	Synth. Org.1
24H	00H	00H	Synth. Org.2
23H	01H	00H	Synth. Org.3
24H	01H	00H	Synth. Org.4
23H	02H	00H	Digi Church
24H	02H	00H	Metallic Org
25H	00H	00H	Pop. Organ1
26H	00H	00H	Pop. Organ2
27H	00H	00H	Pop. Organ3
4AH	00H	00H	Org. Attack1
4BH	00H	00H	Org. Attack2
4CH	00H	00H	Org. Attack3
4DH	00H	00H	Org. Attack4
4EH	00H	00H	Org. Click
28H	0DH	00H	Full Strings
29H	03H	00H	Full Tremolo
28H	0EH	00H	Str/Spiccato
28H	06H	00H	Chamber Str
28H	07H	00H	Chamber Str2
28H	08H	00H	Orch.Str.Ens
28H	00H	00H	Strings1
29H	00H	00H	Strings2
28H	01H	00H	Strings3
29H	01H	00H	Strings4
28H	02H	00H	Strings5
28H	03H	00H	Strings6
28H	04H	00H	Strings7
28H	05H	00H	Strings8
37H	03H	00H	Rich Pizz.
37H	00H	00H	Pizzicato
37H	01H	00H	Mellow Pizz.
28H	09H	00H	AEx Strings
28H	0CH	00H	AEx Str+Trml
28H	0AH	00H	AEx Str+Brs
28H	0BH	00H	AEx Str+Chr
2AH	02H	00H	Slow FullStr
2AH	00H	00H	Slow Str.1
2BH	00H	00H	Slow Str.2
2AH	01H	00H	Slow Str.3
2CH	00H	00H	Synth. Str.1
2DH	00H	00H	Synth. Str.2
35H	00H	00H	Synth. Str.3
5CH	00H	00H	Violin
5CH	01H	00H	AEx Violin
66H	00H	00H	Viola
5DH	00H	00H	Cello

TONE NUMBER	BANK SELECT MSB	BANK SELECT LSB	VOICE NAME
5DH	01H	00H	Cello 2
5CH	02H	00H	Er Hu
31H	01H	00H	Jazz Scat
31H	0BH	00H	Jazz Scat 2
31H	0CH	00H	Jazz Scat 3
30H	0AH	00H	Dreamy Choir
30H	0CH	00H	F.Chorus Luh
30H	0DH	00H	F.Chorus Who
31H	02H	00H	Jazz Doo
31H	03H	00H	Jazz Doot
31H	04H	00H	Jazz Dat
31H	05H	00H	Jazz Bap
31H	06H	00H	Jazz DowFall
31H	0DH	00H	Jazz DoohDot
31H	0EH	00H	Jazz DahDat
32H	01H	00H	Jazz Vaaah
31H	0FH	00H	Jazz Doea
31H	00H	00H	Pop Voice
32H	02H	00H	AEx M.Chorus
30H	0EH	00H	AEx F.Chorus
31H	08H	00H	Soprano
31H	09H	00H	Soprano 2
31H	07H	00H	Tenor
31H	0AH	00H	Tenor&Sop.
30H	02H	00H	Classical
30H	03H	00H	Boys Choir
30H	08H	00H	Boys Choir2
30H	09H	00H	Kids Choir
30H	01H	00H	Gregorian
30H	06H	00H	Gospel
30H	00H	00H	Choir
30H	04H	00H	Female 1
30H	05H	00H	Female 2
30H	0BH	00H	AEx Choir
32H	00H	00H	Synth. Choir
33H	00H	00H	Synth. Voice
34H	00H	00H	Space Voice
34H	02H	00H	Choir Chord
34H	01H	00H	Vocal Menu
34H	03H	00H	Oriental Chr
38H	02H	00H	Grand Piano
38H	04H	00H	Bright Piano
38H	00H	00H	Piano1
4FH	00H	00H	Piano2
38H	01H	00H	Piano3
38H	03H	00H	AEx PianoStr
39H	00H	00H	Honky-tonk
39H	01H	00H	Honky-tonk2
3AH	02H	00H	StageE.Piano
3AH	03H	00H	Dyno E.Piano
3AH	05H	00H	'60s E.Piano
3AH	00H	00H	E.Piano1
3BH	00H	00H	E.Piano2
3AH	01H	00H	E.Piano3
3BH	01H	00H	E.Piano4
3AH	04H	00H	AEx EP+Str
42H	01H	00H	HarpsiSingle
42H	02H	00H	HarpsiDouble
42H	00H	00H	Harpsichord
50H	00H	00H	Clavi.
3CH	00H	00H	Nylon-str.Gt
3CH	01H	00H	Nylon Gt.2

TONE NUMBER	BANK SELECT MSB	BANK SELECT LSB	VOICE NAME
3CH	03H	00H	Fl.Guitar
3CH	04H	00H	Fl.Gtr.Roll
3CH	05H	00H	Requinto Gtr
3DH	03H	00H	Ac.Gtr Sld
3DH	02H	00H	Ac.Gtr Hrm
3DH	00H	00H	Steel-str.Gt
3DH	01H	00H	12str Guitar
3CH	02H	00H	AEx Gtr+Str
3DH	04H	00H	SemAc.Guitar
3EH	00H	00H	Jazz Guitar
3EH	01H	00H	Clean Guitar
3EH	02H	00H	JC E.Guitar
3FH	05H	00H	LP Overdrive
3FH	00H	00H	Overdrive Gt
3FH	01H	00H	DistortionGt
3FH	02H	00H	Power Guitar
3FH	03H	00H	Rock Rhythm
3FH	04H	00H	Muted Guitar
3FH	06H	00H	AEx OD Gtr.
56H	00H	00H	Hawaiian Gt.
56H	01H	00H	Pedal Steel
47H	00H	00H	Banjo
47H	01H	00H	Banjo Treml
46H	00H	00H	Mandolin
43H	00H	00H	Harp
43H	07H	00H	Harp 2
43H	04H	00H	Celtic Harp
43H	05H	00H	Nylon Harp
43H	06H	00H	Harpvox
43H	01H	00H	Koto
43H	02H	00H	Taisho Koto
43H	03H	00H	Shamisen
43H	08H	00H	Sanshin
3CH	07H	00H	Chung Ruan
3CH	06H	00H	Pi Pa
5AH	00H	00H	Sitar
40H	06H	00H	BrassSect.1
40H	05H	00H	BrassSect.2
40H	01H	00H	Brass 1
40H	02H	00H	Brass 2
40H	03H	00H	Brass 3
58H	06H	00H	Orch.Tutti 1
58H	07H	00H	Orch.Tutti 2
58H	08H	00H	Orch.Tutti 3
58H	04H	00H	Orch.Brs Ens
40H	07H	00H	Quad Brass
40H	04H	00H	Power Brass
40H	0AH	00H	FatPop Brass
40H	09H	00H	Brass Fall
40H	0CH	00H	AEx Orch.Brs
40H	0BH	00H	AEx Brass
40H	0DH	00H	AEx Big Band
5EH	06H	00H	Twin Tp.
40H	00H	00H	Tp. Section
5EH	05H	00H	Trumpet Fall
68H	02H	00H	Twin Bones
40H	08H	00H	Bones Sect.
58H	00H	00H	Fr.Horn Sect
58H	01H	00H	Fr.HornSect2
58H	02H	00H	Fr.HornSect3
58H	03H	00H	Fr.HornSect4
58H	05H	00H	MutedFr.Horn

TONE NUMBER	BANK SELECT MSB	BANK SELECT LSB	VOICE NAME
58H	09H	00H	AEx Fr.Horn
41H	00H	00H	Sax.Section
41H	01H	00H	Sax.Section2
41H	02H	00H	Sax.Section3
41H	03H	00H	Sax/Brass
41H	04H	00H	Sax&Clarinet
59H	00H	00H	Synth. Brass
5EH	08H	00H	Trumpet Solo
5EH	00H	00H	Trumpet
5EH	01H	00H	Trumpet2
5EH	02H	00H	Trumpet3
5EH	03H	00H	Tp/Shake
5EH	04H	00H	Mariachi Tp.
5FH	03H	00H	HarmonMuteTp
5FH	02H	00H	Cup Mute Tp.
5FH	00H	00H	Mute Trumpet
5FH	01H	00H	MuteTrumpet2
5EH	07H	00H	AEx Trumpet
67H	00H	00H	Flugel Horn
68H	03H	00H	TromboneSolo
68H	00H	00H	Trombone
68H	01H	00H	Trombone2
67H	01H	00H	F.Horn Solo1
67H	02H	00H	F.Horn Solo2
69H	00H	00H	Soprano Sax
69H	01H	00H	Soprano Sax2
60H	03H	00H	Alto Sax Ex
60H	00H	00H	Alto Sax
60H	01H	00H	Alto Sax2
60H	02H	00H	Blow Sax
60H	04H	00H	AEx AltoSax
61H	02H	00H	Super Tenor
61H	00H	00H	Tenor Sax
61H	01H	00H	Tenor Sax2
61H	03H	00H	Baritone Sax
6AH	02H	00H	Wood Winds
6AH	03H	00H	Wood Winds 2
62H	06H	00H	AEx Woodwind
62H	00H	00H	Flute
62H	01H	00H	Flute2
62H	02H	00H	Flute3
62H	05H	00H	AEx Flute
62H	04H	00H	Piccolo
36H	00H	00H	Synth. Flute
64H	02H	00H	Oboe Solo
64H	00H	00H	Oboe
64H	01H	00H	AEx Oboe
6AH	01H	00H	English Horn
6AH	00H	00H	Bassoon
6AH	04H	00H	Bassoon 2
65H	05H	00H	ClarinetSolo
65H	00H	00H	Clarinet
65H	01H	00H	Clarinet2
65H	02H	00H	Clarinet3
65H	03H	00H	Clarinet4
65H	04H	00H	Bs Clarinet
6BH	00H	00H	Shakuhachi
6BH	01H	00H	Qu Di
63H	00H	00H	Pan Flute
63H	01H	00H	Pan Flute 2
62H	03H	00H	Tin Whistle
6CH	02H	00H	Uillean Pipe

TONE NUMBER	BANK SELECT MSB	BANK SELECT LSB	VOICE NAME
6CH	01H	00H	Bagpipe
63H	02H	00H	Bottle Blow
6CH	00H	00H	HumanWhistle
6DH	00H	00H	Synth. Lead1
6EH	00H	00H	Synth. Lead2
6FH	00H	00H	Synth. Lead3
70H	00H	00H	Synth. Lead4
71H	00H	00H	Synth. Lead5
6EH	01H	00H	Retro Lead
6DH	01H	00H	JP SuperSaw
71H	01H	00H	CC Solo
6EH	02H	00H	AEx Lead
2EH	00H	00H	Synth. Pad1
2FH	00H	00H	Synth. Pad2
2DH	01H	00H	Synth. Pad3
2FH	01H	00H	OB Pad
2DH	02H	00H	Soft Pad
2DH	03H	00H	Mystic Str.
2DH	04H	00H	Crystal Pad
2DH	05H	00H	Polar Night
2DH	06H	00H	Space Pad
2EH	01H	00H	Galactic
71H	02H	00H	Sugar Key
6FH	01H	00H	HollowReleas
2EH	02H	00H	AEx GlassPad
48H	03H	00H	Acco.Classic
48H	01H	00H	Fr.Musette
48H	05H	00H	German Acco.
48H	02H	00H	Italian Folk
48H	00H	00H	Accordion
48H	04H	00H	AEx Acordion
55H	01H	00H	BandoneonFul
55H	00H	00H	Bandoneon
49H	01H	00H	Blues Harp
49H	00H	00H	Harmonica
72H	00H	00H	Organ Bass1
73H	00H	00H	Organ Bass2
0EH	02H	00H	PedalOrg.16'
0EH	03H	00H	Pedal Org.8'
74H	00H	00H	Pipe Org. Bs
74H	02H	00H	Bombarde
74H	01H	00H	Theater Bass
75H	02H	00H	Str.Bass Pdl
75H	00H	00H	String Bass
75H	01H	00H	String Bass2
75H	05H	00H	Str.Bass Oct
75H	03H	00H	Str.BassSolo
7DH	00H	00H	Bass+Cymbal
75H	04H	00H	Baby Bass
78H	00H	00H	Contrabass1
79H	00H	00H	Contrabass2
78H	01H	00H	ContraBs Oct
78H	02H	00H	ContraBs+SD
79H	01H	00H	AEx Bs+Timp
79H	02H	00H	AEx Bs+Tuba
7AH	00H	00H	Tuba
7AH	01H	00H	Tuba2
7AH	02H	00H	Tuba3
76H	00H	00H	E.Bass1
77H	00H	00H	E.Bass2
76H	01H	00H	E.Bass3
77H	01H	00H	E.Bass4

TONE NUMBER	BANK SELECT MSB	BANK SELECT LSB	VOICE NAME
76H	02H	00H	E.Bass5
76H	03H	00H	E.Bass Oct
7BH	01H	00H	Power Bass
7BH	00H	00H	Synth. Bass1
7CH	00H	00H	Synth. Bass2
7CH	01H	00H	Voice Thum
7EH	01H	00H	Timpani
7EH	02H	00H	Timpani2
7EH	03H	00H	Soft Timpani
7EH	0BH	00H	AEx TimpRoll
7DH	0EH	00H	Concert Cym.
7DH	0CH	00H	Short Cymbal
7EH	08H	00H	MalletCymRol
7DH	02H	00H	Crash Cymbal
7DH	01H	00H	Ride Cymbal
7EH	0AH	00H	Snare & Roll
7DH	06H	00H	Snare Drum
7DH	07H	00H	Bass Drum
7DH	0DH	00H	Triangle
7DH	03H	00H	Tambourine
7EH	09H	00H	TambourinRol
7DH	04H	00H	Woodblock
7DH	0BH	00H	Woodblock 2
7DH	0AH	00H	Castanet
7DH	05H	00H	Jingle Bell
7DH	08H	00H	Church Bell
7EH	00H	00H	Perc. Set1
7FH	00H	00H	Perc. Set2
7FH	01H	00H	Perc. Set3
7FH	02H	00H	Orch.HitMenu
7FH	03H	00H	DanceHitMenu
7FH	04H	00H	AcGtrNzMenu
44H	01H	00H	Jazz Vibes
44H	00H	00H	Vibraphone
52H	00H	00H	Glockenspiel
51H	00H	00H	Celesta
57H	00H	00H	Organ Harp
54H	01H	00H	Organ Bell
54H	00H	00H	Tubular-bell
7DH	09H	00H	Hand Bell
45H	00H	00H	Marimba
45H	01H	00H	MarimbaTreml
53H	00H	00H	Xylophone
53H	01H	00H	Balafon
5BH	00H	00H	Steel Drums
5BH	01H	00H	Steel Drums2
5AH	03H	00H	Yang Qin
5AH	02H	00H	Santur
5AH	01H	00H	Kalimba
51H	01H	00H	Music Box
51H	02H	00H	SoftMusicBox
54H	03H	00H	Vibra Bells
54H	04H	00H	Digi Bells
7EH	05H	00H	Finger Snap
7EH	06H	00H	Footsteps
7EH	07H	00H	Key Typing
7EH	04H	00H	Bird

●Tone List (Manual Drum Part)

RHYTHM SET NUMBER	BANK SELECT MSB	BANK SELECT LSB	NAME
03H	00H	40H	POP
04H	00H	40H	R&B
11H	00H	40H	ROCK
2BH	00H	40H	JAZZ BRUSH
09H	00H	40H	HIPHOP
3FH	00H	40H	VOX DRUM
00H	00H	00H	STANDARD
00H	00H	40H	STANDARD 2
08H	00H	00H	ROOM
08H	00H	40H	ROOM 2
10H	00H	00H	POWER
18H	00H	00H	ELECTRONIC
19H	00H	00H	TR-808
19H	00H	40H	DANCE
20H	00H	00H	JAZZ
28H	00H	00H	BRUSH
28H	00H	40H	BRUSH 2
30H	00H	00H	ORCHESTRA
38H	00H	00H	SOUND EFFECT

●Tone List (Manual Percussion Part)

TONE NUMBER	BANK SELECT MSB	BANK SELECT LSB	NAME
00H	00H	00H	PERC SET 1
01H	00H	00H	PERC SET 2
04H	00H	00H	PERC SET 3
05H	00H	00H	ORCHESTRA SET
0BH	00H	00H	ORCHESTRA SET 2
06H	00H	00H	LATIN SET
0CH	00H	00H	ASIAN SET
02H	00H	00H	VOICE PHRASE
07H	00H	00H	VOICE PHRASE 2
08H	00H	00H	VOICE PHRASE 3
09H	00H	00H	SFX SET
0DH	00H	00H	SFX SET 2
03H	00H	00H	JAPANESE SET
0AH	00H	00H	JAPANESSE SET 2

●Tone List (GM2/GS Part)

GS tones may not be played back correctly on GM2 devices. To ensure GM2 compatibility, use only GM2 tones.

❍GM2 Tone List

CC00	CC32	PC#	ToneName
121	0	1	Grand Piano1
121	1	1	Grand Piano1
121	2	1	Piano1
121	0	2	Piano 2
121	1	2	Grand Piano2
121	0	3	Piano 3
121	1	3	Rock Piano
121	0	4	GS Honkytonk
121	1	4	Honky-tonk 1
121	0	5	E.Piano 1
121	1	5	Soft E.Piano
121	2	5	FM+SA EP
121	3	5	Wurly
121	0	6	E.Piano 2
121	1	6	Detuned EP 2
121	2	6	St.FM EP
121	3	6	EP Legend
121	4	6	EP Phase
121	0	7	Harpsi.Singl
121	1	7	Harpsi.Doubl
121	2	7	Harpsichord
121	3	7	Harpsi.o
121	0	8	Soft Clav.
121	1	8	Pulse Clav
121	0	9	Celesta
121	0	10	GS Glocken
121	0	11	GS Music Box
121	0	12	GS Vibe
121	1	12	Vibraphone
121	0	13	GS Marimba
121	1	13	Marimba
121	0	14	Xylophone
121	0	15	Tubular-bell
121	1	15	Church Bell
121	2	15	Carillon
121	0	16	Santur
121	0	17	Full Organ 4
121	1	17	Detuned Or.1
121	2	17	Pop Organ 1
121	3	17	Full Organ 2
121	0	18	Jazz Organ1
121	1	18	Detuned Or.2
121	2	18	Jazz Organ2
121	0	19	Rock Organ2
121	0	20	Church Org.1
121	1	20	Church Org.2
121	2	20	Church Org.3
121	0	21	Reed Organ
121	1	21	Puff Organ
121	0	22	Accordion
121	1	22	Accordion It
121	0	23	Harmonica
121	0	24	Bandoneon
121	0	25	Nylon Guitar
121	1	25	Ukulele
121	2	25	Nylon Gt.o
121	3	25	Nylon Guitar
121	0	26	Steel Guitar
121	1	26	12str Guitar
121	2	26	GS Mandolin
121	3	26	Steel+Body
121	0	27	Jazz Guitar
121	1	27	Hawaiian Gt.
121	0	28	Clean Gt.
121	1	28	Chorus Gt.
121	2	28	Mid Tone GTR
121	0	29	Muted Gt.
121	1	29	Funk Gt.
121	2	29	Funk Gt.2
121	3	29	Jazz Man
121	0	30	Overdrive Gt
121	1	30	Guitar Pinch
121	0	31	DistortionGt
121	1	31	Feedback Gt.
121	2	31	Dist Rtm GTR
121	0	32	Gt.Harmonics
121	1	32	Gt. Feedback

CC00	CC32	PC#	ToneName
121	0	33	Acoustic Bs.
121	0	34	Fingered Bs.
121	1	34	Finger Slap
121	0	35	Picked Bs.
121	0	36	Fretless Bs.
121	0	37	Slap Bass
121	0	38	Slap Bass 2
121	0	39	Synth Bass 1
121	1	39	SynthBass101
121	2	39	Synth Bass 3
121	3	39	Clavi Bass
121	4	39	Hammer
121	0	40	Synth Bass 2
121	1	40	Synth Bass 4
121	2	40	Rubber Bass
121	3	40	Attack Pulse
121	0	41	GS Violin
121	1	41	Slow Violin
121	0	42	Viola
121	0	43	GS Cello
121	0	44	Contrabass
121	0	45	GS Trem.Str
121	0	46	PizzicatoStr
121	0	47	Harp
121	1	47	Yang Qin
121	0	48	Timpani
121	0	49	Strings
121	1	49	Orchestra
121	2	49	60's Strings
121	0	50	Slow Strings
121	0	51	Syn.Strings1
121	1	51	Syn.Strings3
121	0	52	Syn.Strings2
121	0	53	Choir Aahs
121	1	53	Choir
121	0	54	Doos Voice
121	1	54	Humming
121	0	55	SynVox
121	1	55	Analog Voice
121	0	56	OrchestraHit
121	1	56	Euro Hit
121	2	56	6th Hit
121	3	56	Euro Hit
121	0	57	Trumpet
121	1	57	Dark Trumpet
121	0	58	TromboneSoft
121	1	58	GS Trombone
121	2	58	Bright Tb
121	0	59	Tuba
121	0	60	MutedTrumpet
121	1	60	MuteTrumpet2
121	0	61	French Horn
121	1	61	Fr.Horn Solo
121	0	62	Brass 1
121	1	62	Brass 2
121	0	63	Synth Brass1
121	1	63	Synth Brass3
121	2	63	AnalogBrass1
121	3	63	Jump Brass
121	0	64	Synth Brass2
121	1	64	Synth Brass4
121	2	64	AnalogBrass2
121	0	65	Soprano Sax

CC00	CC32	PC#	ToneName
121	0	66	Blow Sax
121	0	67	Tenor Sax
121	0	68	Baritone Sax
121	0	69	Oboe
121	0	70	GS Eng.Horn
121	0	71	Bassoon
121	0	72	Clarinet
121	0	73	Piccolo
121	0	74	Flute
121	0	75	Recorder
121	0	76	Pan Flute
121	0	77	Bottle Blow
121	0	78	Shakuhachi
121	0	79	Whistle
121	0	80	Ocarina
121	0	81	Square Wave
121	1	81	Square
121	2	81	Sine Wave
121	0	82	Saw Wave
121	1	82	Saw
121	2	82	Doctor Solo
121	3	82	Natural Lead
121	4	82	SequencedSaw
121	0	83	Syn.Calliope
121	0	84	Chiffer Lead
121	0	85	Charang
121	1	85	Wire Lead
121	0	86	Solo Vox
121	0	87	5th Saw Wave
121	0	88	Bass & Lead
121	1	88	Delayed Lead
121	0	89	Fantasia
121	0	90	Warm Pad
121	1	90	Sine Pad
121	0	91	Polysynth
121	0	92	Space Voice
121	1	92	Itopia
121	0	93	Bowed Glass
121	0	94	Metal Pad
121	0	95	Halo Pad
121	0	96	Sweep Pad
121	0	97	Ice Rain
121	0	98	Soundtrack
121	0	99	Crystal
121	1	99	Syn Mallet
121	0	100	Atmosphere
121	0	101	Brightness
121	0	102	Goblin
121	0	103	Echo Drops
121	1	103	Echo Bell
121	2	103	Echo Pan
121	0	104	Star Theme
121	0	105	Sitar
121	1	105	Sitar 2
121	0	106	Banjo
121	0	107	Shamisen
121	0	108	Koto
121	1	108	Taisho Koto
121	0	109	Kalimba
121	0	110	Bagpipe
121	0	111	Fiddle
121	0	112	Shanai
121	0	113	Tinkle Bell

CC00	CC32	PC#	ToneName
121	0	114	Agogo
121	0	115	Steel Drums
121	0	116	Woodblock
121	1	116	Castanets
121	0	117	Taiko
121	1	117	Concert BD
121	0	118	Melo. Tom 1
121	1	118	Melo. Tom 2
121	0	119	Synth Drum
121	1	119	808 Tom
121	2	119	Elec Perc.
121	0	120	Reverse Cym.
121	0	121	Gt.FretNoise
121	1	121	Gt.Cut Noise
121	2	121	String Slap
121	0	122	Breath Noise
121	1	122	Fl.Key Click
121	0	123	Seashore
121	1	123	Rain
121	2	123	Thunder
121	3	123	Wind
121	4	123	Stream
121	5	123	Bubble
121	0	124	Bird
121	1	124	Dog
121	2	124	Horse-Gallop
121	3	124	Bird 2
121	0	125	Telephone 1
121	1	125	Telephone 2
121	2	125	DoorCreaking
121	3	125	Door
121	4	125	Scratch
121	5	125	Windchime
121	0	126	Helicopter
121	1	126	Car-Engine
121	2	126	Car-Stop
121	3	126	Car-Pass
121	4	126	Car-Crash
121	5	126	Siren
121	6	126	Train
121	7	126	Jetplane
121	8	126	Starship
121	9	126	Burst Noise
121	0	127	Applause
121	1	127	Laughing
121	2	127	Screaming
121	3	127	Punch
121	4	127	Heart Beat
121	5	127	Footsteps
121	0	128	Gun Shot
121	1	128	Machine Gun
121	2	128	Lasergun
121	3	128	Explosion

❍GS Tone List

Voice without a "#" symbol appended to their name may not play back satisfactorily on other GS sound generating devices.

CC0	CC32	PC#	NAME
0	0	1	Grand Piano1 #
0	65	1	MIDI Piano1
0	71	1	RichChoirPno
0	72	1	Piano 1*
8	0	1	Piano 1w #
8	64	1	Grand Piano1
16	0	1	Piano 1d #
0	0	2	Piano 2 #
0	64	2	Grand Piano2
0	65	2	MIDI Piano2
0	72	2	Piano 2*
8	0	2	Piano 2w #
0	0	3	Piano 3 #
0	65	3	EG+Rhodes 1
0	66	3	EG+Rhodes 2
0	67	3	Piano_Bell
0	68	3	Piano_Choir
0	72	3	Piano 3*
8	0	3	Piano 3w #
8	64	3	Rock Piano
8	65	3	Piano_Vox
8	66	3	Piano_Str
0	0	4	GS Honkytonk #
0	72	4	Honky-tonk*
8	0	4	Honky-tonk 2 #
8	64	4	Honky-tonk 1
0	0	5	GS E.Piano1 #
0	65	5	Hard Rhodes
0	66	5	Stage Rhodes
0	72	5	E.Piano 1*
8	0	5	Detuned EP 1 #
8	64	5	Soft E.Piano
8	66	5	Chord EP1
8	68	5	PhaseRhods
16	0	5	E.Piano 1v #
16	64	5	E.Piano 1
16	65	5	Dyno Rhodes*
16	66	5	Suitcase
16	67	5	Dyno Rhodes
16	68	5	Tremolo Dyno
24	0	5	60's E.Piano #
24	64	5	Sine Rhodes
24	65	5	Wurly
24	66	5	Dist E.Piano
24	72	5	60'sE.Piano*
0	0	6	GS E.Piano2 #
0	64	6	Hard E.Piano
0	65	6	E.Piano 3
0	66	6	E.Piano 2
0	67	6	EP Phase
0	72	6	E.Piano 2*
8	0	6	Detuned EP 2 #
8	64	6	St.FM EP
8	65	6	FM+SA EP
8	66	6	Hard FM EP
8	67	6	MellowRhodes
16	0	6	E.Piano 2v #
16	64	6	E.Piano 2
16	66	6	EP Legend
0	0	7	GS Harpsi. #

CC0	CC32	PC#	NAME	
0	64	7	Harpsi.Singl	
0	65	7	Harpsichord	
0	72	7	Harpsichord*	
8	0	7	Coupled Hps.	#
8	64	7	Harpsi.Doubl	
8	65	7	Synth Harpsi	
16	0	7	Harpsi.w	#
24	0	7	Harpsi.o	#
0	0	8	Soft Clav.	#
0	64	8	Analog Clav.	
0	65	8	5th Ana.Clav	
0	66	8	Hard Clav.	
0	67	8	Clav.	
0	68	8	SynRingClav.	
0	69	8	Reso Clav.	
0	70	8	Phase Clav.	
0	71	8	Pulse Clav	
0	72	8	Clav.*	
0	0	9	Celesta	#
0	64	9	Pop Celesta	
0	72	9	Celesta*	
0	0	10	GS Glocken	#
0	64	10	Glockenspiel	
0	72	10	Glocken*	
0	0	11	GS Music Box	#
0	64	11	Music Box	
0	72	11	Music Box*	
0	0	12	GS Vibe	#
0	64	12	Vibraphone	
0	65	12	Pop Vibe.	
0	72	12	Vibraphone*	
8	0	12	Vibe.w	#
8	64	12	Jazzy Vib+Gt	
0	0	13	GS Marimba	#
0	64	13	Soft Marimba	
0	72	13	Marimba*	
8	0	13	Marimba	#
8	64	13	Balafon	
0	0	14	Xylophone	#
0	72	14	Xylophone*	
0	0	15	Tubular-bell	#
0	72	15	Tubularbell*	
8	0	15	Church Bell	#
9	0	15	Carillon	#
9	72	15	Carillon*	
0	0	16	GS Santur	#
0	64	16	Santur	
0	72	16	Santur*	
0	0	17	Organ 1	#
0	66	17	Lower Organ1	
0	67	17	Full Organ 5	
0	68	17	Trem. Organ	
0	72	17	Organ 1*	
1	0	17	Full Organ 1	
8	0	17	Detuned Or.1	#
8	66	17	Lower Organ2	
8	67	17	Full Organ 6	
9	0	17	Full Organ 2	
16	0	17	Pop Organ 1	#
16	66	17	Lower Organ3	
16	67	17	Full Organ 7	
16	72	17	Pop Organ 1*	
17	0	17	Pop Organ 2	
18	0	17	Pop Organ	
32	0	17	Full Organ 4	#
32	1	17	Organ 4	
32	64	17	VS Organ	
32	66	17	Metalic Org.	
32	67	17	Full Organ 8	
33	0	17	Full Organ 3	
0	0	18	Organ 2	#
0	65	18	Jazz Organ4	
0	66	18	Jazz Organ 5	
0	72	18	Organ 2*	
1	0	18	Jazz Organ3	
8	0	18	Detuned Or.2	#
8	65	18	Organ Bass	
8	66	18	Jazz Organ 6	
32	0	18	Jazz Organ1	#
32	1	18	Organ 5	
32	64	18	Jazz Organ2	
32	65	18	Pipe Org. Bs	
32	66	18	Jazz Organ 7	
0	0	19	Rock Organ2	#
0	64	19	Rock Organ1	
0	65	19	Rotary Org.S	
0	66	19	Rotary Org.F	
0	67	19	L-Organ	
0	68	19	Rock Organ1	
0	72	19	Rock Organ2*	
0	0	20	Church Org.1	#
0	64	20	Organ Flute	
0	65	20	Church Organ	
0	67	20	Diapason 8′	
0	72	20	ChurchOrg.1*	
8	0	20	Church Org.2	#
8	64	20	Trem.Flute	
8	65	20	Church Organ	
8	67	20	Puff Organ	
16	0	20	Church Org.3	#
16	64	20	Theater Org.	
16	66	20	Nason flt 8′	
0	0	21	Reed Organ	#
0	64	21	Digi Church	
0	65	21	CheeseOrgan	
0	72	21	Reed Organ*	
0	0	22	Accordion Fr	#
0	64	22	Accordion	
0	65	22	Hard Accord	
0	72	22	AccordionFr*	
8	0	22	Accordion It	#
0	0	23	GS Harmonica	#
0	64	23	Harmonica	
0	68	23	Blues Harp	
0	72	23	Harmonica*	
0	0	24	Bandoneon	#
0	72	24	Bandoneon*	
0	0	25	GS Nylon Gt.	#
0	66	25	Chord Gt1	
0	72	25	Nylon-strGt*	
8	0	25	Ukulele	#
8	64	25	Gut Guitar	
16	0	25	Nylon Gt.o	#
16	64	25	Nylon Gt.o	
32	0	25	Nylon Guitar	#
32	1	25	Nylon Gt.2	

CC0	CC32	PC#	NAME	
32	64	25	Nylon Gt.2	
32	65	25	Velo Harmnix	
32	68	25	Requint Gtr	
0	0	26	Steel-str.Gt	#
0	64	26	Steel Guitar	
0	65	26	EX A.Guitar*	
0	66	26	Ac.GuitarSld	
0	67	26	EX A.Guitar2	
0	68	26	Steel+Body	
0	69	26	Steel Vox	
0	70	26	V Ac.Guitar3	
0	72	26	Steel-strGt*	
8	0	26	12-str.Gt	#
8	64	26	12str Guitar	
9	0	26	Nylon+Steel	
16	0	26	GS Mandolin	#
16	64	26	Mandolin	
32	0	26	Steel Gt.2	
0	0	27	Jazz Guitar	#
0	68	27	Jazz Grt.	
0	72	27	Jazz Guitar*	
1	4	27	Mellow Gt.	
8	0	27	GS Hawaiian	#
8	64	27	Hawaiian Gt.	
0	0	28	Clean Gt.	#
0	64	28	JC E.Guitar	
0	65	28	Open Hard	
0	66	28	Mid Tone GTR	
0	72	28	Clean Gt.*	
8	0	28	Chorus Gt.	#
8	64	28	Clean Half	
0	0	29	Muted Gt.	#
0	64	29	Muted Dis.Gt	
0	65	29	Muted Gt.2	
0	72	29	Muted Gt.*	
8	0	29	Funk Gt.	#
8	64	29	Jazz Man	
8	72	29	Funk Gt.*	
16	0	29	Funk Gt.2	#
0	0	30	Overdrive Gt	#
0	65	30	Guitar Pinch	
0	68	30	LP Chorus	
0	72	30	OverdriveGt*	
0	0	31	GS Dist.Gt	#
0	64	31	DistortionGt	
0	65	31	Dazed Guitar	
0	66	31	Rock Rhythm2	
0	72	31	Dist.Guitar*	
8	0	31	Feedback Gt.	#
8	64	31	Power Gt.2	
8	65	31	Power Guitar	
8	66	31	Rock Rhythm	
8	67	31	Dist Rtm GTR	
8	68	31	Feedback Gt2	
8	69	31	5th Dist.	
0	0	32	Gt.Harmonics	#
0	64	32	Ac.Gt.Harmnx	
0	72	32	Gt.Harmo*	
8	0	32	Gt. Feedback	#
0	0	33	GS Ac.Bass	#
0	64	33	Acoustic Bs.	
0	65	33	A.Bass+Cymbl	
0	72	33	Acoustic Bs*	

CC0	CC32	PC#	NAME	
0	0	34	GS Fing.Bass	#
0	64	34	Fingered Bs.	
0	65	34	Finger Slap	
0	68	34	Baby Bass	
0	72	34	Fingered Bs*	
1	4	34	Fingered Bs2	
0	0	35	GS Picked Bs	#
0	64	35	Picked Bs.	
0	65	35	Mute PickBs.	
0	72	35	Picked Bs.*	
0	0	36	Fretless Bs.	#
0	64	36	Mr.Smooth	
0	72	36	Fretless Bs*	
0	0	37	Slap Bass	#
0	72	37	Slap Bass 1*	
0	0	38	Slap Bass 2	#
0	72	38	Slap Bass 2*	
0	0	39	Synth Bass 1	#
0	64	39	Jungle Bass	
0	65	39	Hammer	
0	72	39	Synth Bass1*	
1	0	39	SynthBass101	#
1	64	39	ResoSH Bass	
8	0	39	Synth Bass 3	#
8	4	39	Acid Bass	
8	64	39	Clavi Bass	
0	0	40	Synth Bass 2	#
0	64	40	Synth Bass	
0	72	40	Synth Bass2*	
8	0	40	Synth Bass 4	#
8	4	40	Beef FM Bass	
8	65	40	Modular Bass	
8	66	40	Attack Pulse	
16	0	40	Rubber Bass	#
16	64	40	SH101 Bass	
16	65	40	WireStr Bass	
16	66	40	Sync Bass	
16	72	40	Rubber Bass*	
19	4	40	Smooth Bass	
0	0	41	GS Violin	#
0	64	41	Violin	
0	72	41	Violin*	
8	0	41	Slow Violin	#
0	0	42	Viola	#
0	72	42	Viola*	
0	0	43	GS Cello	#
0	64	43	Cello	
0	72	43	Cello*	
0	0	44	Contrabass	#
0	72	44	Contrabass*	
0	0	45	GS Trem.Str	#
0	64	45	Tremolo Str	
0	65	45	Suspense Str	
0	72	45	Tremolo Str*	
0	0	46	PizzicatoStr	#
0	64	46	Mellow Pizz.	
0	72	46	Pizzicato*	
0	0	47	GS Harp	#
0	64	47	Harp	
0	65	47	Yang Qin	
0	66	47	Harp Strings	
0	72	47	Harp*	
0	0	48	Timpani	#

CC0	CC32	PC#	NAME	
0	72	48	Timpani*	
0	0	49	GS Strings	#
0	64	49	Strings	
0	65	49	Velo Strings	
0	66	49	Oct Strings	
0	67	49	60's Strings	
0	68	49	Strings 2	
0	71	49	Strings	
0	72	49	Strings*	
8	0	49	Orchestra	#
8	64	49	OrchestraBrs	
8	65	49	Choir Str	
0	0	50	GS Sl.Str	#
0	64	50	Slow Strings	
0	65	50	SlowStrings2	
0	66	50	Legato Str	
0	67	50	Warm Strings	
0	71	50	Slow Strings	
0	72	50	SlowStrings*	
0	0	51	Syn.Strings1	#
0	64	51	Syn.Slow Str	
0	65	51	OB Strings	
0	72	51	Syn.Str 1*	
8	0	51	Syn.Strings3	#
0	0	52	Syn.Strings2	#
0	64	52	JP Saw Str	
0	72	52	Syn.Str 2*	
0	0	53	Choir Aahs	#
0	64	53	Rich Choir	
0	66	53	Dreamy Choir	
0	72	53	Choir Aahs*	
32	0	53	Choir	#
32	64	53	Choir Str	
32	65	53	Voice Oohs	
32	69	53	Voice Dahs	
0	0	54	Pop Voice	#
0	64	54	Jazz Voices	
0	65	54	Doos Voice	
0	66	54	Thum Voice	
0	67	54	Doot Accent	
0	68	54	Dat Accent	
0	69	54	Bop Accent	
0	70	54	Doos & Doot	
0	71	54	Dat & Bop	
0	72	54	Pop Voice*	
0	0	55	SynVox	#
0	64	55	Choir Oohs	
0	65	55	AT JazzScat	
0	66	55	Humming	
0	67	55	Humming	
0	68	55	Tenor	
0	69	55	Analog Voice	
0	70	55	Jazz Scat	
0	71	55	Dow Fall	
0	72	55	SynVox*	
0	0	56	OrchestraHit	#
0	64	56	Philly Hit	
0	65	56	6th Hit	
0	66	56	Euro Hit	
0	67	56	Bass Hit	
0	68	56	Rave Hit	
0	69	56	Stack Hit	
0	72	56	Orche.Hit*	

CC0	CC32	PC#	NAME	
0	0	57	GS Trumpet	#
0	64	57	Trumpet	
0	65	57	EX Trumpet	
0	66	57	V Trumpet	
0	67	57	Tp Shake	
0	72	57	Trumpet*	
1	64	57	EX Tp&Shake*	
1	65	57	EX Tp&Shake	
1	66	57	Dark Trumpet	
1	67	57	Romantic	
1	68	57	Romantic Tp	
0	0	58	GS Trombone	#
0	64	58	TromboneSoft	
0	65	58	Bright Tb	
0	68	58	Trombone 3	
0	72	58	Trombone*	
1	0	58	Trombone 2	#
1	64	58	Trombone	
0	0	59	GS Tuba	#
0	64	59	Tuba	
0	72	59	Tuba*	
0	0	60	MutedTrumpet	#
0	64	60	MuteTrumpet2	
0	68	60	Muted Tp 2	
0	72	60	M.Trumpet*	
0	0	61	French Horn	#
0	64	61	Fr.Horn Solo	
0	65	61	Flugel Horn	
0	72	61	FrenchHorns*	
1	0	61	Fr.Horn 2	#
1	64	61	SuperF.Horns	
1	65	61	OrchestraBrs	
0	0	62	Brass 1	#
0	65	62	Bright Brass	
0	66	62	Brass ff	
0	67	62	Brass sfz	
0	72	62	Brass 1*	
8	0	62	Brass 2	#
8	64	62	Power Brass	
8	65	62	BrassSection	
8	66	62	St. Brass ff	
8	69	62	Brass Fall	
8	70	62	Trumpet Fall	
0	0	63	Synth Brass1	#
0	64	63	Jump Brass	
0	72	63	SynthBrass1*	
8	0	63	Synth Brass3	#
8	64	63	DeepSynBrass	
8	65	63	Oct SynBrass	
16	0	63	AnalogBrass1	#
16	72	63	A.Brass 1*	
0	0	64	Synth Brass2	#
0	64	64	EX Orchestra	
0	65	64	Soft Brass	
0	72	64	SynthBrass2*	
8	0	64	Synth Brass4	#
16	0	64	AnalogBrass2	#
0	0	65	GS Sop.Sax	#
0	64	65	Soprano Sax	
0	72	65	Soprano Sax*	
0	0	66	Alto Sax	#
0	64	66	AltoSax Soft	
0	65	66	EX Alto Sax	

CC0	CC32	PC#	NAME	
0	66	66	Sax Section	
0	72	66	Alto Sax*	
8	0	66	Blow Sax	
8	64	66	Grow Sax	
8	66	66	AltoSax + Tp	
0	0	67	Tenor Sax	#
0	65	67	Super Tenor	
0	72	67	Tenor Sax*	
8	64	67	Tenor Sax f	
8	68	67	Super Tenor	
0	0	68	GS Bari Sax	#
0	64	68	Baritone Sax	
0	65	68	Bari & Tenor	
0	72	68	BaritoneSax*	
0	0	69	GS Oboe	#
0	64	69	Oboe	
0	72	69	Oboe*	
1	64	69	Tune Oboe	
0	0	70	GS Eng.Horn	#
0	64	70	English Horn	
0	72	70	EnglishHorn*	
0	0	71	Bassoon	#
0	72	71	Bassoon*	
0	0	72	Clarinet	#
0	64	72	Bs Clarinet	
0	72	72	Clarinet*	
0	0	73	Piccolo	#
0	72	73	Piccolo*	
0	0	74	GS Flute	#
0	64	74	Flute	
0	72	74	Flute*	
0	0	75	Recorder	#
0	72	75	Recorder*	
0	0	76	GS Pan Flute	#
0	64	76	Blow Pipe	
0	65	76	Pan Flute	
0	72	76	Pan Flute*	
0	0	77	Bottle Blow	#
0	64	77	Bottle Blow	
0	65	77	BottleBlow2	
0	72	77	Bottle Blow*	
0	0	78	Shakuhachi	#
0	72	78	Shakuhachi*	
0	0	79	Whistle	#
0	72	79	Whistle*	
0	0	80	Ocarina	#
0	72	80	Ocarina*	
0	0	81	Square Wave	#
0	64	81	Syn.Square	
0	65	81	CC Solo	
0	66	81	Dual Sqr&Saw	
0	67	81	SquareWave2	
0	72	81	Square Wave*	
1	0	81	Square	#
1	64	81	FM Lead 1	
1	66	81	LM Square	
3	4	81	Mellow FM	
5	4	81	Shmoog	
8	0	81	Sine Wave	#
8	64	81	JP8 Square	
0	0	82	Saw Wave	#
0	64	82	Mg Lead	
0	65	82	JP SuperSaw	

CC0	CC32	PC#	NAME	
0	66	82	Saw Wave	
0	67	82	Waspy Synth	
0	72	82	Saw Wave*	
1	0	82	Saw	#
1	64	82	P5 Saw Lead	
1	65	82	Natural Lead	
1	68	82	OB Saw 1	
4	4	82	Big Lead	
8	0	82	Doctor Solo	#
8	64	82	Rhythmic Saw	
8	65	82	SequencedSaw	
8	72	82	Doctor Solo*	
0	0	83	Syn.Calliope	#
0	64	83	JP8 Pulse	
0	65	83	LM PureLead	
0	72	83	SynCalliope*	
2	4	83	Pure PanLead	
0	0	84	Chiffer Lead	#
0	64	84	Cheese Saw	
0	72	84	ChifferLead*	
0	0	85	Charang	#
0	64	85	Reso Saw	
0	65	85	2600 SubOsc	
0	66	85	Acid Guitar	
0	72	85	Charang*	
8	64	85	Wire Lead	
0	0	86	Solo Vox	#
0	64	86	RAVE Vox	
0	72	86	Solo Vox*	
0	0	87	5th Saw Wave	#
0	64	87	5th Lead	
0	72	87	5th SawWave*	
0	0	88	Bass & Lead	#
0	64	88	FM Lead 2	
0	65	88	Delayed Lead	
0	68	88	Fat & Perky	
0	72	88	Bass & Lead*	
1	4	88	Big & Raw	
0	0	89	Fantasia	#
0	64	89	Fantasia 2	
0	65	89	New Age Pad	
0	66	89	Chord Syn1	
0	67	89	Sugar Key	
0	68	89	BriteSawKey	
0	72	89	Fantasia*	
0	0	90	Warm Pad	#
0	64	90	Soft Pad	
0	65	90	Warm JP Str	
0	66	90	Sine Pad	
0	72	90	Warm Pad*	
0	0	91	Polysynth	#
0	64	91	P5 Poly	
0	65	91	Poly King	
0	66	91	Octave Stack	
0	67	91	Happy Synth	
0	72	91	Polysynth*	
1	4	91	80's PolySyn	
0	0	92	Space Voice	#
0	64	92	Heaven II	
0	65	92	Holy Voices	
0	66	92	Warm SquPad	
0	67	92	Itopia	
0	72	92	Space Voice*	

CC0	CC32	PC#	NAME	
0	0	93	Bowed Glass	#
0	72	93	Bowed Glass*	
0	0	94	Metal Pad	#
0	64	94	Tine Pad	
0	65	94	Panner Pad	
0	72	94	Metal Pad*	
0	0	95	Halo Pad	#
0	64	95	JP8 Sqr Pad	
0	65	95	Vox Sweep	
0	72	95	Halo Pad*	
0	0	96	Sweep Pad	#
0	64	96	Sweep Pad 2	
0	65	96	Polar Pad	
0	66	96	Converge	
0	72	96	Sweep Pad*	
10	4	96	Celestial Pd	
0	0	97	Ice Rain	#
0	64	97	LFO RAVE	
0	72	97	Ice Rain*	
2	4	97	African wood	
0	0	98	Soundtrack	#
0	64	98	Ancestral	
0	65	98	Prologue	
0	72	98	Soundtrack*	
0	0	99	Crystal	#
0	64	99	Vibra Bells	
0	65	99	Clear Bells	
0	66	99	ChristmasBel	
0	67	99	Bell Strings	
0	72	99	Crystal*	
1	0	99	Syn Mallet	#
1	72	99	Syn Mallet*	
2	4	99	Soft Crystal	
9	4	99	Digi Bells	
17	4	99	Air Bells	
0	0	100	Atmosphere	#
0	64	100	Harpvox	
0	65	100	Nylon Harp	
0	66	100	Nylon+Rhodes	
0	67	100	HollowReleas	
0	72	100	Atmosphere*	
1	4	100	Warm Atmos	
6	4	100	Ambient Pad	
0	0	101	Brightness	#
0	64	101	Org Bells	
0	72	101	Brightness*	
0	0	102	Goblin	#
0	64	102	Calculating	
0	65	102	Goblinson	
0	66	102	50's Sci-Fi	
0	72	102	Goblin*	
0	0	103	Echo Drops	#
0	64	103	Big Panner	
0	72	103	Echo Drops*	
1	0	103	Echo Bell	#
1	64	103	Ai-yai-a	
2	0	103	Echo Pan	#
2	64	103	Echo Pan 2	
2	65	103	Water Piano	
0	0	104	Star Theme	#
0	64	104	Rising Osc	
0	72	104	Star Theme*	
0	0	105	Sitar	#

CC0	CC32	PC#	NAME	
0	72	105	Sitar*	
1	0	105	Sitar 2	#
0	0	106	Banjo	#
0	72	106	Banjo*	
0	0	107	GS Shamisen	#
0	64	107	Shamisen	
0	72	107	Shamisen*	
0	0	108	Koto	#
0	72	108	Koto*	
8	0	108	Taisho Koto	#
8	72	108	Taisho Koto*	
0	0	109	Kalimba	#
0	72	109	Kalimba*	
0	0	110	Bagpipe	#
0	72	110	Bagpipe*	
0	0	111	Fiddle	#
0	72	111	Fiddle*	
0	0	112	Shanai	#
0	72	112	Shanai*	
0	0	113	Tinkle Bell	#
0	72	113	Tinkle Bell*	
47	68	113	Cymbal Roll	
0	0	114	Agogo	#
0	72	114	Agogo*	
0	0	115	Steel Drums	#
0	72	115	Steel Drums*	
0	0	116	Woodblock	#
0	72	116	Woodblock*	
8	0	116	Castanets	#
0	0	117	Taiko	#
0	72	117	Taiko*	
8	0	117	Concert BD	#
8	72	117	Concert BD*	
0	0	118	Melo. Tom 1	#
0	64	118	Bodhran	
0	72	118	Melo.Tom 1*	
8	0	118	Melo. Tom 2	#
0	0	119	Synth Drum	#
0	72	119	Synth Drum*	
8	0	119	808 Tom	#
9	0	119	Elec Perc.	#
0	0	120	Reverse Cym.	#
0	72	120	ReverseCym.*	
0	0	121	Gt.FretNoise	#
0	72	121	Fret Noise*	
1	0	121	Gt.Cut Noise	#
1	64	121	Wah Brush Gt	
2	0	121	String Slap	#
3	4	121	Gt.CutNoise2	
4	4	121	Dist.CutNoiz	
5	64	121	Bass Slide	
6	64	121	Pick Scrape	
20	4	121	G.StrokeMenu	
21	4	121	G.SlideMenu	
0	0	122	Breath Noise	#
0	72	122	BreathNoise*	
1	0	122	Fl.Key Click	#
47	4	122	BrthNzMenu	
0	0	123	Seashore	#
0	72	123	Seashore*	
1	0	123	Rain	#
2	0	123	Thunder	#
2	64	123	Thunder Bell	

CC0	CC32	PC#	NAME	
3	0	123	Wind	#
4	0	123	Stream	#
5	0	123	Bubble	#
0	0	124	Bird	#
0	72	124	Bird*	
1	0	124	Dog	#
2	0	124	Horse-Gallop	#
3	0	124	Bird 2	#
4	65	124	Cat	
0	0	125	Telephone 1	#
0	72	125	Telephone 1*	
1	0	125	Telephone 2	#
2	0	125	DoorCreaking	#
3	0	125	Door	#
4	0	125	Scratch	#
5	0	125	Windchime	#
5	64	125	Bar Chimes	
8	4	125	ScratchKey	
0	0	126	Helicopter	#
0	72	126	Helicopter*	
1	0	126	Car-Engine	#
2	0	126	Car-Stop	#
3	0	126	Car-Pass	#
4	0	126	Car-Crash	#
5	0	126	Siren	#
6	0	126	Train	#
7	0	126	Jetplane	#
7	64	126	Falling Down	
8	0	126	Starship	#
9	0	126	Burst Noise	#
25	4	126	Car Horn	
27	64	126	R.Crossing	
28	68	126	Compresser	
0	0	127	Applause	#
0	72	127	Applause*	
1	0	127	Laughing	#
2	0	127	Screaming	#
3	0	127	Punch	#
4	0	127	Heart Beat	#
5	0	127	Footsteps	#
7	64	127	Finger Snap	
10	64	127	Small Club	
22	4	127	Voice Kikit	
23	68	127	Voice ComeOn	
24	64	127	Voice Aou	
25	68	127	Voice Oou	
0	0	128	Gun Shot	#
0	72	128	Gun Shot*	
1	0	128	Machine Gun	#
2	0	128	Lasergun	#
3	0	128	Explosion	#
6	68	128	Explosion 2	

●Drum Set

GS Drum Sets may not play back properly on GM2 devices. To ensure compatibility with GM2, use only GM2 tones.

❍GM2

CC0	CC3	PC#	Drum Set Name
0	120	1	STANDARD 2
0	120	9	ROOM 2
0	120	17	POWER
0	120	25	ELECTRONIC
0	120	26	TR-808
0	120	33	JAZZ
0	120	41	BRUSH 2
0	120	49	ORCHESTRA
0	120	57	SOUND EFFECT

❍GS

Voice with a "*" symbol appended to their name may not play back satisfactorily on other GS sound generating devices.

CC0	CC32	PC#	Drum Set Name
0	64	4	POP *
0	64	18	ROCK *
0	64	44	JAZZ BRUSH *
0	64	64	VOX DRUM *
0	0	1	STANDARD
0	64	1	STANDARD 2 *
0	0	9	ROOM
0	64	9	ROOM 2 *
0	0	17	POWER
0	0	25	ELECTRONIC
0	0	26	TR-808
0	64	26	DANCE *
0	0	33	JAZZ
0	0	41	BRUSH
0	64	41	BRUSH 2 *
0	0	49	ORCHESTRA
0	0	57	SOUND EFFECT